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RECENT ADVANCES IN VIRAL INFECTIONS OF CHILDHOOD.[1]

By FRANK FENNER,

Department of Microbiology, John Curtin School of Medical Research, Australian National University, Canberra, Australia.

In 1881 Robert Koch described the method of plating bacteria on solid plates as a means of obtaining pure cultures. This technical achievement, coming after the germ theory of infectious disease had been brilliantly developed by Pasteur and Koch, led eventually to the description of large numbers of bacteria, and their association with human and animal disease. However, the immediate result was the demonstration of the vast variety of bacteria to be found in the fluids and excreta of sick men, and a consequent confusion as to which bacteria were associated with disease and which were harmless commensals. Seeking a way out of this confusion, Koch in 1891 laid down some requirements which have since become known as Koch's postulates, and which proved invaluable in providing yardsticks by which to judge whether or not there was a causal relationship between parasite and disease.

There has been a revolution in animal virology since 1949 somewhat analogous to the revolution in bacteriology ushered in by the use of the agar plate. Before that time the viral ætiology of an infectious disease of man could be established only by showing that a filtrable agent would cause typical disease in a human volunteer or in a laboratory animal such as the mouse, chick embryo or rabbit. There were, of course, supplementary methods connected with the production of antibodies, but the total number of viruses known to be associated with human disease, including all the rare encephalitis viruses, was only about 60.

The demonstration by Enders in 1949 that poliomyelitis viruses could grow in cultures of non-nervous cells ushered in a new era in virology, and in the last decade a further 60 different new viruses have been recovered from human sources, and there are probably just as many again waiting for identification in virologists' ice boxes. As with the discovery of the multitudes of streptococci, staphylococci and coliform bacteria, the immediate result has been confusion. But the confusion is now being sorted out, and in a few years' time I think that our understanding of viral infections, especially the minor infections, will be greatly clarified. Clinicians and public health workers in Aus-

[1] Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

tralia have, to a large extent, been spared this period of confusion, for only in Melbourne have virus diagnostic facilities of wide enough coverage, provided by the Epidemiological Research Unit at Fairfield Infectious Diseases Hospital and the Virus Diagnostic Laboratory of the Royal Children's Hospital, been available. We will be lagging sadly behind European and North American standards of medicine, however, if five years hence we are not able to offer virus diagnostic services in each centre in which medical students are trained.

Tonight I will try to survey, of necessity in a superficial way, those virus diseases which are common in children in the U.S.A., in which there have been significant advances in knowledge during the last five years. The geographical selection arises from the fact that the vast bulk of recent work on human viruses at the clinical and epidemiological level has been carried out in U.S.A.; but there is good evidence that the viruses I will describe are cosmopolitan.

I have deliberately refrained from describing Australian work with these viruses, in the hope that some of you may be able to describe your own experiences during the discussion at the conclusion of the meeting. In particular I hope that Dr. McLorinan will say something of the observations made at the Epidemiological Research Unit at Fairfield.

Herpes Simplex.

The epidemiology of herpes simplex was elucidated by Burnet and Williams in the pre-tissue culture days. I mention it again only because primary herpetic stomatitis is a relatively common disease of children, which sometimes tends to be overlooked. With increasing experience more cases of fatal generalized herpes simplex infection of the new-born are recognized, and earlier today Dr. Colebatch described cases seen at the Royal Children's Hospital in Melbourne.

The mechanism of latency in herpes simplex is still unexplained; it is tempting to draw analogies with the prophage state in lysogenic bacteria, but this is still pure speculation.

Measles.

Although it is the classical acute generalized viral infection of man, measles could be studied only by using monkeys or human volunteers until Enders and Peebles cultivated the virus in 1954. In tissue cultures of human or monkey cells, it produces characteristic multinuclear giant cells, or syncytia. Later eosinophilic inclusion bodies appear in most of the nuclei of these giant cells.

Neutralization and complement fixation tests have been carried out with tissue cultures, or culture fluids. Virus has been regularly recovered from the blood and throat washings at the onset of the rash. In experimentally infected monkeys the exanthem appeared soon after the establishment of the virsemia, and a few days later the complement-fixation antibody titre rose to a high level.

The irregular results obtained in earlier experiments with monkeys appear to have been due to infection of these animals with human measles virus; and Ruckle has recovered an agent indistinguishable from human measles virus from monkey kidney tissue obtained from a "normal" monkey.

Virus which had undergone variation in tissue culture passage was found to multiply readily in chick embryos, although attempts to pass the unaltered strains were negative.

The tools now exist for an adequate study of the pathogenesis and immunology of measles; and the basic information is now available to allow production of a measles vaccine, if this is considered desirable.

Chickenpox (Varicella).

Chickenpox virus was first effectively cultivated by Enders's colleague, T. H. Weller, in 1953. In culture it has some peculiar properties. Much more than any other known virus its spread is strictly from cell to cell, and successful passage from tissue culture supernatant fluids has occurred with the utmost rarity. Obviously, it behaves differently in the human host, and in fluid from vesicles the virus particles apparently occur free and in an infectious state.

Studies with fluorescent antibodies have confirmed the identity of varicella and zoster viruses. It is of some interest that herpes zoster has been recorded in one fifth of all cases of agammaglobulinæmia, which suggests that serum antibody is in some way associated with the prevention either of the initial localization of zoster virus in the ganglia, or of its activation.

The Adenoviruses.

The adenoviruses are a group of serologically distinct viruses with the same soluble complement-fixing antigens and having the same properties of ether resistance, lack of pathogenicity for laboratory animals, and characteristic cytopathogenicity for human and monkey epithelial cell cultures. The virus particles are moderately large, being 80 to 120$\mu\mu$ in diameter when obtained from culture fluids, and 50 to 65$\mu\mu$ when measured in cell nuclei in crystalline-like patterns. They are highly stable, and HeLa cell cultures are the most practical means of virus isolation.

Complement-fixing antibody responses are group-specific, whereas neutralizing antibody responses are generally type-specific. There are at least 16 serotypes, 13 derived from human sources and three from simian sources. Surveys for neutralizing antibodies have shown that human infections with adenoviruses are highly prevalent. Many of the 16 serotypes have as yet not been adequately investigated to define their pathogenicity in man, but certain types are the major cause of respiratory disease in recruits in service camps in the U.S.A., and other types are responsible for a distinct clinical entity, pharyngo-conjunctival fever. Many cases of follicular conjunctivitis and kerato-conjunctivitis are probably due to adenoviruses.

Acute Respiratory Disease in Military Recruits.

All of you remember the epidemics of respiratory disease which interfered so drastically with recruit training in the early days of the last war — "Woodside throat", "Pucka throat" and so on. Between 1942 and 1945 over four million admissions to hospital for common respiratory diseases were recorded by the U.S. Army. It looks now as though a substantial proportion of these were due to two adenoviruses, types 4 and 7. They show a characteristically high incidence in winter and a low incidence in summer, and occur in new recruits, not in seasoned troops. Their severity can be gauged by the following figures for patients in hospital: mean maximum temperature, 103° F.; duration of fever, six days; average stay in hospital, 10 to 12 days; X-ray evidence of pulmonary involvement in 15%. In U.S. Army trials, considerable protection was afforded with a formalin-killed tissue culture vaccine.

In spite of their widespread occurrence in service training camps throughout the U.S.A., these two adenoviruses have not been recovered from civilians, and in some surveys antibody to type 4 appears to be completely lacking in children.

Follicular Conjunctivitis, Kerato-Conjunctivitis and Pharyngo-Conjunctival Fever.

Conclusive evidence, including studies with human volunteers, shows that adenoviruses may cause ocular symptoms in man. Adenovirus type 8 appears to be the principal cause of kerato-conjunctivitis, whereas types 3 and 7 may produce either simple follicular conjunctivitis, or pharyngo-conjunctival fever, in which there are concomitant respiratory and ocular symptoms. In addition, evidence is accumulating that other serotypes (1, 4, 5, 6 and 10) may sometimes produce similar symptoms.

The question of whether the eye may not be the portal of entry of the virus is raised by the constancy of eye involvement, the fact that unilateral conjunctivitis may be the first symptom, and the relative ease of infecting volunteers by the conjunctival route, compared with the difficulty of securing respiratory tract infection. Conjunctival irritation appears to play a role in the establish-

ment of infection, and swimming-pools are almost certainly important either in the dissemination of the virus or in the genesis of clinical manifestations, or both.

Chanock's Group-Associated Virus.

In 1956 Chanock described a new virus belonging to the mumps-influenza group (myxoviruses), which was associated with acute laryngo-tracheo-bronchitis in children. This condition is one of the common respiratory diseases of children in North America, where it is called croup. The original observations were made at Cincinnati, and the virus was found to produce a peculiar type of degeneration in HeLa and human amnion cells. Since then the same agent has been recovered from several other places in the U.S.A., and also from the Hospital for Sick Children in Toronto. It is now regarded as one of the major causes of croup in children.

An interesting new laboratory trick has been applied to simplify the identification of this virus. If an infected tissue culture is flooded with a suspension of red blood cells, the latter attach to infected cells, and the effect can be specifically inhibited by immune serum.

Primary Atypical Pneumonia Virus.

During the last war there was a good deal of investigation, principally with human volunteers, of primary atypical pneumonia. Some cases so diagnosed turned out to be "Q" fever, but another group, associated with cold agglutinins, yielded a virus which Eaton at Harvard could pass by the amniotic inoculation of chick embryos, and demonstrate by the inoculation of a laboratory rodent called the cotton rat. Eaton's claims were received with considerable scepticism, the common criticism being that the agent was derived from the cotton rats themselves. This sort of thing has happened often enough to make virologists very wary.

However, Eaton's claims have recently been vindicated, with the use of an ingenious experimental technique. You have doubtless heard of Coon's fluorescent antibody stains. The method consists of conjugating fluorescein isocyanate with γ globulin obtained from potent antiserum. When tissue sections are flooded with this fluid, there is an accumulation of the fluoresent material at the site of the specific antigen. Using this method, Liu, at Harvard, has recently shown that Eaton's primary atypical pneumonia virus multiplies in the cells of the pulmonary epithelium of chick embryos, but causes no signs of infection. Between 1954 and 1956 eight new strains of primary atypical pneumonia virus were recovered. Using pieces of infected chick embryo lung, he has devised a fluorescence inhibition test, and has applied this to serological surveys. These show that specific antibody is common in the general population. Sera taken from wartime volunteers infected with Eaton's virus have shown the expected changes in titre between acute and convalescent stage sera, and the virus has been re-isolated from the lungs and sputum of a patient who died in 1943, the tissues having been stored in dry ice. Liu has found that, as might be expected, classical primary atypical pneumonia is one extreme in a spectrum which ranges into inapparent infections. The virus is unrelated to the adenoviruses and is very heat-labile.

The Common Cold.

I have just mentioned the recent discovery of some 20 new viruses from tissues of the human respiratory tract, and there are others, like Price's "J.H." virus, which I have not described. Are any of these the common cold virus?

In posing this question one comes up against the major ætiological problem in the "minor illnesses" which we are now considering. How can one associate a particular (common) virus with a very common syndrome such as the common cold? I will not attempt to answer this in detail, but will comment upon some aspects of the problem. First, volunteer studies indicate that susceptibility to suggestion represents a more powerful inciter of running noses than any virus yet discovered. Secondly, studies aimed at evaluating common cold vaccines and the therapeutic effect of antihistamines have shown the remarkable effects of simple saline vaccines and sugar pills in the prevention, modification or cure of colds. Thirdly, studies on industrial absenteeism due to the common cold showed that a comparatively small number of industrial workers contributed most of the absenteeism—an illogical way for an infectious virus to behave. Thus there appears to be a large psychosomatic element in so-called common colds. Dr. McNair Scott's account of the psychosomatic element in the activation of herpes lesions is relevant in this context. Of course, in addition to these rather insubstantial ailments, there is a definite problem of specific microbial disease of nasal and pharyngeal areas; and it is pertinent to ask how much of recurrent respiratory illness may be due to bacterial allergies. Finally, there is the possibility that recurrent inflammation of the mucous membrane of the respiratory tract may be due to activation of latent viruses, which persist in the respiratory tracts of most individuals. You are all aware that cold sores are caused by reactivation of latent herpes simplex virus infection. It is perhaps relevant that the adenoviruses were first discovered not as agents of acute infectious diseases, but as viruses which grew out of human adenoid tissue and tonsils which were incubated for three or four weeks. Adenoviruses types 1, 2 and 5 were the most commonly encountered; they are acquired in early childhood, and yet could be "unmasked" from the adenoids of older children and adults just as readily as from those of infants.

It seems to me possible that latent adenoviruses, or other latent viruses resident in the respiratory tract, may be activated from time to time just as latent herpes simplex virus is activated, with the production of mild respiratory symptoms. Proof will be difficult, for on analogy with herpes we would expect no antibody change; and recovery of the virus from throat washings is difficult if the concentration of virus is low. Workers at the Common Cold Unit at Salisbury have failed to recover adenoviruses from patients with natural or experimental colds.

The Enteroviruses.

The term "enterovirus" has recently been proposed to cover a large group of viruses whose normal habitat is the enteric tract of man. Many of them cause recognizable symptoms only when they pass from the gastro-intestinal tract to produce a generalized infection, which may or may not be associated with involvement of the central nervous system.

Included in the enteroviruses are the three types of poliomyelitis virus, 19 group A and 5 group B Coxsackie viruses, and 19 E.C.H.O. (enteric cytopathogenic human orphan) viruses. Increasing knowledge has destroyed the earlier clear distinction between Coxsackie and E.C.H.O. viruses. This rested on the pathogenicity of Coxsackie viruses for suckling mice, but strains of some E.C.H.O. viruses after tissue culture passage induce lesions and disease in infant mice indistinguishable from those produced by the Coxsackie viruses. Convefsely, some strains of Coxsackie virus, on primary isolation from the human enteric tract in tissue culture, are not pathogenic for infant mice. Further, some strains of both Coxsackie and E.C.H.O. viruses have been found to produce neuronal lesions not unlike those of poliomyelitis in monkeys.

The similarities of all these viruses in size, ether resistance, seasonal incidence and epidemiological pattern are acknowledged by their new grouping as the enteroviruses.

A wide variety of different human diseases have been associated with enterovirus infection. Apart from poliomyelitis, the most important are herpangina, pleurodynia, aseptic meningitis and neonatal myocarditis, which are associated with Coxsackie viruses; and aseptic meningitis, certain exanthems, and possibly diarrhœa associated with E.C.H.O. virus infection (Table I). All of the viruses are not infrequently recovered from normal children, and from those with various minor febrile illnesses, but much less often from normal adults. Indeed, the enteroviruses are so frequently recovered from the fæces of apparently normal young children that association of a particular

strain with disease is possible only after rather stringent requirements have been satisfied as to associated antibody changes and possibly recovery of virus from other sites like the cerebro-spinal fluid.

Salivary Gland Virus (Cytomegalic Inclusion Disease).

For years histopathologists have noted, particularly in human salivary glands examined at autopsy, a peculiar form of cellular gigantism associated with large eosinophilic intranuclear inclusions, and occasionally diagnoses of generalized salivary gland virus disease (or cytomegalic inclusion disease) have been made on morphological grounds. Similar histological appearances have been observed in common laboratory animals—the mouse, guinea-pig and rabbit.

TABLE I.

Diseases Associated with Enterovirus Infection.
(After *Am. J. Pub. Health*, 1957, 47: 1556.)

Enteroviruses.	Associated Disease.
Poliomyelitis virus	Paralysis (complete to slight muscle weakness); aseptic meningitis; undifferentiated febrile illness, particularly during the summer.
Coxsackie viruses, group A.	Herpangina; undifferentiated febrile illness, particularly during the summer; aseptic meningitis (types A7, A9).
Coxsackie viruses, group B.	Aseptic meningitis; pleurodynia; undifferentiated febrile illness with pharyngitis; myocarditis or encephalo-myocarditis during the neonatal period and early childhood; mild paralysis (?).
E.C.H.O. viruses..	Aseptic meningitis (types 2, 3, 4, 5, 6, 9, 14, 16); summer rash (types 2, 9, 16[1]); summer febrile illness; mild paralysis (?) (type 6); summer diarrhoea of infants and children (type 18 and others).

[1] Neva has found the ætiological agent of Boston exanthem to be antigenically related to E.C.H.O. virus type 16.

Recently, the causative viruses of both the animal and human diseases have been recovered in tissue culture, in which they show high species specificity. Isolations have been made from the autopsy material of children who have died from the generalized disease or from other diseases, from long-term adenoid cultures, from liver biopsies in suspected cases and from the urine.

Serum neutralization and complement fixation tests have been developed, and the epidemiological and clinical pictures of the human disease bear striking resemblances to those of toxoplasmosis. Serum surveys indicate that infection is common in adults, the positive rate rising from 14% in the six to 23 months old group to 70% to 80% at 35 years and over. Serial blood specimens taken from a number of children demonstrated maternally transferred antibody at birth, which fell off after a few weeks, but by one to two years rose again in a proportion of children. The close correspondence in all age groups of complement-fixing and neutralising antibodies is suggestive evidence of persistence of the virus, a view quite compatible with the early histopathological findings.

Symptoms appear to be confined to the new-born or very young infants, and are often indistinguishable from those of congenital toxoplasmosis—chorio-retinitis, hæmolytic anæmia, intracranial calcification and hepato-splenomegaly. Other cases resemble erythroblastosis fœtalis. Typical cells with inclusions have been recovered from the urine and gastric washings, and virus isolations have been made from both sorts of material.

Asymptomatic infection appears to be fairly common, and may be accompanied by prolonged excretion of the virus in the urine, sometimes for as long as two years. In one study in Washington, 15% of the one to three year age group had complement-fixing antibody, and two-thirds of these children (and no others) yielded virus from cheek swabs or in the urine. Recently, generalised cytomegalic inclusion disease has been described in adults, usually as a terminal complication of diseases associated with marrow failure and panhæmocytopenia. In the adult the principal lesions are in the lungs and the adrenal glands.

Latent Virus Infections of Man.

Perhaps the most important aspect of the recent studies on new human viruses is the development of a technique whereby viruses may be demonstrated in apparently normal human tissues. Until recently the only recognized cases of reactivation of occult viruses were recurrent herpes simplex, herpes zoster (which may be regarded as a special type of reactivation of varicella virus) and occasionally psittacosis.

However, the technique of long-continued growth of excised adenoid and tonsillar tissue, which first led to the isolation of an adenovirus by Rowe and Huebner in 1953, has implications of great practical and theoretical importance. Subsequent work by this group has shown that the majority of specimens of adenoid tissue, whether taken from children or from adults, will produce adenovirus, and they have also recovered the virus of cytomegalic inclusion disease from an appreciable proportion of children. Indeed, Huebner obtained from one specimen of adenoid tissue an adenovirus after cultivation for four weeks, herpes simplex virus after seven weeks and salivary gland virus after nine weeks.

Pereira has recently extended the technique to study the persistence of virus in experimental animals, and found that after intravenous inoculation of rabbits with adenovirus he could recover virus from ground-up spleen suspensions for only three days, whereas long-term spleen cultures were still "positive" two months after the inoculation.

The other indication of the great number of latent virus infections comes as a by-product of the safety testing of poliomyelitis vaccines. As you know, the cells used for this work are epithelial cells obtained from monkey kidneys, and in the course of this work no less than 12 different viruses have so far been recovered. As with human adenoid cultures, such "contaminants" are recovered with increasing frequency when cultures are maintained for two or three weeks. There is no reason to believe that man and monkey are peculiar in the large number of viruses which can be isolated from their tissues, or that such agents occur primarily in the adenoids or kidneys. It seems certain that if the same methods of cultivation are applied to other tissues from other animals, similar numbers of viruses will be recovered. The assessment of their significance is obviously difficult. We are accustomed to the idea that man accommodates a variety of non-pathogenic bacteria in his intestinal tract (though the improved growth of farm animals when fed antibiotics leads to some doubt about their complete lack of pathogenicity). Can we contemplate a host of commensal viruses living in the cells of human and animal tissues?

For the first time an adequate technique is available for the demonstration of latent virus infection. As well as the offering of an experimental solution to such problems as the relation between persistence of virus infection and continued antibody production, a whole vista is opened up of the possible relations of persistent viral infection to a variety of chronic and degenerative diseases, not excluding some forms of malignant disease.

SOME PRINCIPLES IN THE MANAGEMENT OF EMOTIONAL DISORDERS OF CHILDREN.[1]

By WINSTON RICKARDS,
Department of Psychiatry, Royal Children's Hospital, Melbourne.

IN Western countries recent years have seen revolutionary changes in the field of child health, such as the successful control of infectious disease and nutritional problems. The pediatrician has become faced with an

[1] Part of a symposium on the management of emotional problems in childhood. Read at the annual meeting of the Australian Paediatric Association, Canberra, April 19 to 21, 1958.

apparent increase of problems of a psychological nature, manifesting themselves as problems of behaviour in its widest sense, for example disturbed behaviour, school performance failure and physical symptoms of varied type. *In his increasing responsibility for the total care of the* child, the pædiatrician has been led, therefore, to study the everyday problems of the everyday child. Psychiatrists, in their search for the genesis of disturbed behaviour of adult patients, have also been led to the child, the father *of the man. Aided by scientific methods of recent origin,* it has become possible to see neurotic and psychotic patterns extending far back into childhood, and a *systematic approach to the child has been enthusiastically* undertaken. In this paper it is proposed to deal with *some of the principles underlying our present approach to* the management of emotional disorders of children. These will be presented rather didactically, but may serve as a *basis for mutual discussion.*

Basic Orientation.

Children, who Adolph Meyer, to give emphasis to the point, termed "a new experience in nature", are unique; they are not born equal or the same, but are endowed with certain innate potentials for growth. Study of the *child means study of the whole child,* and therefore consideration of physical, intellectual and emotional factors, all of which are interrelated and affect each other. *This can be well seen in such patients as the child with* cerebral palsy, in whom the physical factor hinders the *child developing intellectually to the level of his true* potential, and emotionally imposes frustration and abnormal dependence; the retarded child, who still soils and *behaves destructively; the passive, inhibited, frightened,* intelligent child who does not speak and presents as a retarded one; the child with the partial hearing loss whose intellectual development is delayed in various areas such as speech and verbal understanding, who, through his *sensory deprivation and the reaction of those about him,* is emotionally disturbed.

The child grows in a human environment with which he must interact (Figure I), an environment which can stimulate him or impose stress on him. Just as physical *factors, for example infection and poor nutrition, can* devastate growth primarily on a physical level, it is now realized that emotional factors can devastate personality development as shown by studies of deprived children in institutions. As the child's environment is a human one, *he develops through social relationships, first to mother,* then in turn to father and siblings; hence a family is his early social unit. Then his social relationships extend to other adults and peers, and in this area we realize the significance of grandparents. Later the child's environ*ment is more structured, kindergarten and school* becoming the prototypes of future society. Finally, the area of society in which he is placed and the culture in which he grows must be considered.

Clinically, psychological disorders signify a maladjustment between a particular child and his particular environment, sufficient to affect his healthy development. *Therefore one must look at the child in a total way,* including consideration of physical factors, not excluding them; realizing that as each child is unique there will be *many variations, especially in maturational patterns.* Growth is often uneven, spurts and lags being common in *the whole picture or in various areas.* Finally, one realizes that emotional problems arise from and are manifestations of disturbed interpersonal relationships.

The Clinical Problem.

The Referral.

The child with the so-called emotional or behaviour problem is usually brought to the physician because he is a problem to someone, for instance, parents, school or society. Why he is brought will depend on many factors, including the values, feelings and personalities of the parents, current fashions of society, ignorance of the varying maturational norms of growth. However, it is noted that although the problem may not be in the child but in the perception of the child by the environment, in either case, relationships of the child to his environment are disturbed. One therefore asks oneself four basic *questions: who is the child? who brought him? why did* they bring him? why did they bring him now?

The Symptom.

The symptom is the presenting feature which initiates *the referral. It may not be the problem, but it may* indicate that a problem is present. It need not localize the area of difficulty or indicate the significance of the symptom. Some symptoms are emphasized, others ignored.

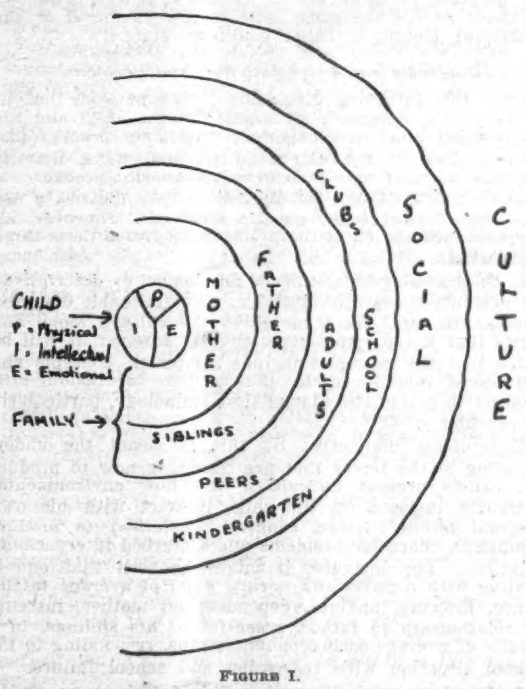

FIGURE I.

The interaction of the child with his environment, and his development through widening social relationships.

Some parents see no problem where other parents panic. Symptoms may have varied meanings to both parents and children. Commonly the presenting symptoms are covers or signs indicating upset, but not necessarily indicating the nature of the upset; for instance, the mother *of a schizophrenic child was anxious only about the child's* lack of speech (denial); a rejecting mother focused her anxiety on the child's physical symptom of food refusal; quarrelling parents using the child as a chopping block saw symptoms which they used for their own emotional *needs.*

Symptoms have different meanings in different social *settings, for example delinquency in a "proper" household* has a different significance to delinquency in a delinquent area of society; the dull child may have a different meaning to intelligent academic parents than a dull child in a large family of basically dull, unambitious people; *the quiet, passive, good child is often valued,* though he may be potentially sicker than an aggressive active preschool child brought by an insecure mother unable to tolerate his aggression.

Symptoms may have secondary effects, and may even be perpetuated through their attention-seeking value or their secondary gain. A symptom may have punishment-seeking significance for the neurotic child.

Concept of Levels.

The symptom must be considered in relation to the total personality of the child, a personality which has developed not in isolation but through interaction with significant people in his environment. It is now understood more clearly how the child's personality develops through identification with parent figures. Conscious attitudes, beliefs, ideas and behaviour are but manifestations of a more profound emotional state with unconscious determinants. The child's personality is related significantly, therefore, to the parent personalities; for instance, in the case of "a pure neurosis", the child's problem manifested by his symptom is often an expression of the parent's personality conflicts. We can, therefore, approach the problem at three levels, the level of the symptom, the level of the conscious attitude and the level of the underlying feeling or fuller emotional state.

Diagnosis and Formulation of the Problem.

From this foregoing discussion it can be seen that in arriving at a diagnosis all aspects of the child and his environment must be considered. Customary practice has been to look at the diagnosis in three ways, first to envisage clinical or descriptive diagnosis, secondly a dynamic diagnosis and thirdly a developmental or, to use the psychological term, genetic diagnosis. However, an adequate formulation of the problem integrates these three approaches.

1. Clinical diagnosis. This is nosological or descriptive; for example encopresis, dyslalia, neurosis, habit disorder, encephalitis, etc. Here one gives the child a name and trusts that it represents some entity. However, it will be noted that the examples include symptoms, concepts and syndromes and serve to indicate the confusion still existing in systematic diagnostic terminology, particularly in psychiatry.

2. Dynamic diagnosis. By this is meant the understanding of the forces that are operating now to produce the child's present difficulties, and how environmental pressures imposed on the child interact with his own internal forces (drives, conflicts, anxieties) to produce symptoms, character problems and disturbed interpersonal relations. For instance, it might be seen that one is dealing with a physically normal child of average intelligence, insecure, anxious, dependent on mother, insecure in relationship to father, resentful of his siblings, in a family of average socio-economic status, responding to the school situation with regression and school failure.

3. Developmental diagnosis. This refers to an understanding of the origin and development of the patient's personality and current conflict, and attempts to answer the question, "How has the present state of affairs evolved?" This involves a full study from which, for instance, it might be found that the child was unwanted, the mother rejecting, early infantile problems were manifested by feeding difficulties, toilet training was coercive, the child responding with disturbed bowel patterns, or there was poor preparation for the birth of a sibling to which he reacted with regressive symptoms. These are but a few of the aspects noted throughout his development. Here the importance lies in the reaction of the child to his life experiences, realising the subjective nature of retrospective data.

In the light of information obtained from the integration of these three aspects of diagnosis, a formulation can be made estimating both the weaknesses and the strengths in the total field, the particular areas and levels of conflict, the positive areas to work through and the disturbing or negative factors with which one must deal.

These methods of diagnosis indicate how much the problem is reactive to current stress, and how much the disturbance is of long duration. Strengths in the field are sought as well as weaknesses. In common terms one is just as interested in what the child and his environment can do, or can be helped to do, as well as what they cannot do. Finally, a psychiatric diagnosis is a positive diagnosis and not a diagnosis of exclusion.

Psychotherapy.

Definition.

Psychotherapy can be defined as the carrying through of a well-defined programme for modifying the emotional life and adjustment of a patient through new life experiences and psychological processes which can influence the patient in the direction of health.

Goals of Therapy.

After a formulation of the clinical problem, the physician should plan goals of therapy, and his function will then vary accordingly. Goals will naturally be affected by many reality factors in the patient and his environment, for instance accessibility of the patient to treatment if he lives in the country, financial factors, intelligence or gross personality defects in the child or parents. Goals can also be considered in terms of the three levels—the symptom, the conscious attitude and the underlying fuller emotional state.

In general terms therapy directed at the symptom alone would only be indicated (*a*) if effective treatment of the symptom was possible, (*b*) if one symptom only was present, (*c*) if there was much secondary gain in the symptom and removing it would break a vicious circle, (*d*) if no marked psychological problems were present, (*e*) when both child and parents were motivated towards a real cure.

Symptomatic treatment may break a vicious circle but there are dangers: (i) The real problem is ignored, and if the symptom is removed without solving basic emotional problems other disturbances will occur. (ii) When such symptomatic treatment stops, recurrence of the same symptom or others may occur. (iii) Concentration of attention on the symptom may fix it. (iv) Attention may become focused on the treatment procedures to the exclusion of relevant and basic psychological factors. (v) Such treatment may be used by the child and parents in their conflict, for instance the mother uses the treatment to punish the child, and in turn the child may use the treatment to punish his mother. To be successful, therefore, both child and parents must be motivated towards health, and measures directed at the symptom be part of a more comprehensive plan.

When therapy is directed at the level of conscious attitudes, the physician aims at modifying beliefs and attitudes of parents and child by advice, reassurance, explanation, guidance and education. However, a basic principle to be remembered at this point is that any advice or reassurance given which runs contrary to powerful underlying feelings will fail.

Change by appeal to conscious mechanisms can be effective only when the patient is in a positive relationship to the therapist, and when the reassurance and advice fulfil the patient's intellectual and, most important, emotional needs. Though the patient may intellectually understand and rationally accept logically presented advice, powerful emotional drives of unconscious origin often prevent him utilizing or indeed integrating such advice. The discrepancy between intellectual awareness and emotional functioning is fundamental in personality disturbances. This is well seen when ambivalence, anxiety, guilt and hostility are strongly present; for example, an over-anxious mother who unconsciously rejects her child may not be able to offer the love and acceptance and carry out the "ignore the symptom" advice, implied in the suggested management. It is comparable with telling anxious parents not to worry without knowing the source of origin of their anxieties. If reassurance is used one must know what one is reassuring. Besides realizing the limitations of therapy at the level of conscious attitudes, the physician should be aware of common manifestations of deeper emotional upset, though therapy at this level requires more extensive and intensive training.

Role of the Physician.

In paediatric practice the physician becomes involved in a family situation which presents to him because there is

a disturbance in relationship between the child, his family and other aspects of society. This situation demands that the physician accept both the child and the parent as they present to him, and that he establish a meaningful relationship with them at their present level of functioning. He must be aware that both the child and the parents will react to him and use him in the light of their own feelings and perceptions; for example the child may perceive him and react to him as though he was a punisher, a frightening figure, a judge or authoritative figure, while the parent may seek him as an ally to deal with their difficult child.

It may often be difficult to get a meaningful relationship with the child. It may take time, and in accepting the child at his level the use of techniques such as play and symbolic methods may be needed; if play the child needs, well play he must. The physician may find it difficult to avoid taking sides, and in child guidance practice, where difficulty in separation of child and mother occurs, or where extreme hostility exists between them, it may be necessary to "divide and conquer", that is one worker will see the mother and another the child. One principle that is too often forgotten is that this is a family, and father is an important member. Fathers have been termed the long-forgotten people in child psychiatry, and are often included too late, sometimes too early.

Areas of Therapy.

Psychotherapy may be divided into indirect and direct.

Indirect Psychotherapy.

Here efforts are directed at the child's environment designed to relieve stresses impinging on the child, and to deal with areas of conflict arising in the environment or alternatively to supply the child with positive outlets for the expression of his needs. Here one would work logically through the areas represented in the diagram (Figure I), parent figures being worked with, not forgetting father, and sibling relationships realized; in other words the family are approached in a therapeutic way. Other significant adults such as grandparents and teachers can often be used to good advantage, while peer relationships can be fostered by encouraging group activities of various kinds. The school is an important index of functioning and an important life situation for the child. In problems of this nature, educational placement and modification of school attitudes can often help. In society, clubs etc. can supply useful outlets for expression. Finally, when gross disruptions of family life exist, the vast problem of institutional placement must be faced.

These efforts to modify the environment often assume that the child will then be able to cope, but this is not necessarily so. The environmental stress may be eased, but the child may not respond because of an incapacitating personality disorder, and a temporary relief of stress may only lead to recurrence later. When the child is separated from the parents, the settling of a behaviour problem may serve only to raise the parents' guilt and anxiety if the child is well when away from them, but his symptoms recur on his return home.

Direct Psychotherapy.

The principles of direct therapy apply also to work with parents, usually conducted concurrently, and here the physician himself works therapeutically with the child. Again one must remember to look at the whole child, from the physical, intellectual and emotional point of view, realizing that the child with abnormal physical or intellectual functioning has indeed more reason to be emotionally disturbed. The notion of direct and indirect therapy is important, as the physician must decide in what area or areas his efforts should be directed.

Methods of Psychotherapy.

The physician effects change in psychotherapy, that is influences the patient in the direction of health through a relationship in which he is emotionally significant to the patient.

The physician, in the relationship to his patient, may function in different ways, ranging from marked activity, for example being directive, authoritative, advising his patients, organizing environmental change, to listening sympathetically, and by his acceptance encouraging the patient to discover his difficulties for himself. In this case he is relatively permissive, and encourages the patient to find his own solution through his acceptance and skilled understanding. One can think of a continuum ranging from extreme activity on the one hand to relative passivity on the other. Note the use of the term relative passivity, for even if the physician is relatively non-directive the important fact of his being in a relationship to his patient is of important emotional significance.

Thus psychotherapy can be grouped into the following types which are not sharply defined methods, but rather trends which merge into each other and may alternate at times during the course of a particular case: (i) suppressive, (ii) supportive, (iii) relationship, (iv) expressive.

Suppressive Psychotherapy.

At the active end of the scale the physician attempts to eliminate the symptom, and by this restore the *status quo*, by acting as an authoritative directive figure who expects to be obeyed. He may not be obeyed, and in fact will not be obeyed if his advice runs contrary to the emotional needs of his patient. Such suppressive therapy may work spuriously, for example drive the symptom underground, particularly in a patient in whom the emotional problem is that of dependence. It is hard to see much place in pædiatrics for such therapy.

Supportive Psychotherapy.

This method utilizes guidance, advice, reassurance, encouragement and suggestion. Support includes educational guidance, relief of stress through holidays, etc. Under this heading one may well include various types of directive therapies such as speech therapy, physiotherapy and remedial teaching.

The aim of this therapy is to support and guide, and as such is most useful either where the reactive element in the case is considerable, that is, where one sees sound personalities under realistic stress, or where on the other hand one sees weak personalities unable to cope without a dependent relationship with some permissive giving figure. Here it will be seen that the physician functions through permitting dependence and regression in the patient and family, and he must be aware of this and the dangers.

In these two methods of therapy are included medical treatments, some of which may be specific, for example the wise and intelligent use of sedation and tranquillizers, given in the context of a comprehensive plan of treatment. The goals of these therapies are limited; one is not modifying personality structure, but is attempting to give relief by removing symptoms or aiding areas of function. Finally, a difficulty encountered in these methods is the giving of reality when the patient is unable to accept it emotionally, or when in fact the physician does not know the extent of the emotional problem.

Relationship Psychotherapy.

When the problem is severe and diffuse and the symptoms are many, the child and parents very disturbed and the personality disorders too complex, more extensive treatment must be contemplated. In relationship therapy the physician must form a relationship in which he is sympathetic, permissive, accepting, non-condemning, non-judging and non-critical. Through this relationship he encourages his patients to ventilate feelings freely as they need, and soon he may expose unconscious determinants of their disturbed feelings which are manifest on the surface as a symptom or as disturbed attitudes or disturbed interpersonal relationships. The physician, in accepting the patient for what he is (particularly important with children), allows him to come to grips with himself, and the physician can gently guide later

when the conflicts are exposed. This method can often be utilized in general practice, where the family doctor is in the most intimate contact with the family.

Expressive Psychotherapy.

When the emotional problem is most severe and personality distortions still more complex, adequate treatment may demand more extensive and intensive psychotherapeutic techniques, which would involve the deeper understanding of relationships and of symbolic processes. The physician may need to utilize technical procedures which could include interpretation. This type of therapy is known by many names. It is a highly skilled method, demanding intensive psychotherapeutic training, and is fraught with dangers for those who are not adequately trained. There are gross dangers from wild analysis or wild interpretation. In such a grossly disturbed patient, child or parent, the patient himself sets the pace, and the physician must avoid the temptation of premature activity, even though he may be aware of the dynamic forces operating.

The behaviour of the patient is accepted, though limits are set. In the case of children, play, the royal road to the understanding of the infantile personality's effort at synthesis, is a means of making contact and working through their problems. Material appearing in the interview is the relatively unprovoked product of the patient in the context of the relationship.

Conclusion.

Such is the range of methods of therapy which make differing demands on the physician. Regardless of the nature of the therapy, the physician-patient relationship is the method of effecting a change and is mediated by the technique of the interview, which is the crux of any diagnostic or therapeutic situation. For in the interview the patient reacts and relates to the physician with his current emotional feelings, which in turn arise from and reveal his past adaptations; for instance a frightened child is frightened in the interview, a deprived child seeks acceptance, the dependent mother readily seeks advice, the guilty mother insists on a judgement from the doctor. All this happens in the interview itself, and the physician, perceiving, understanding and reacting to the nature of the feelings which the patient brings with him to the interview and transfers to the physician, is able to diagnose and treat appropriately.

The physician as a person has his own individual values and particular interests in this type of work, and will behave in the light of his own motivation, training and personality. He may like to treat and indeed be successful in treating certain problems, and may well wish to refer away or fail with others. These features may be related to the physician's own personality and life experiences. Awareness of this aspect of the doctor's role is the basis of present day training methods in psychotherapy.

ARTHUR JEFFREYS WOOD: A PÆDIATRIC PROFILE.[1]

By HOWARD BOYD GRAHAM,
Melbourne.

We live in deeds, not years, in thought not breaths,
In feelings, not in figures on a dial.
We should count time by heart-throbs. He most lives
Who thinks most, feels the noblest, acts the best.

—PHILIP JAMES BAILEY, *Festus*, 1839.

IT is my mission on this occasion to recall some of the thoughts, feelings and actions of Arthur Jeffreys Wood, the great Australian pædiatrician, who enriched the lives of all with whom he came in contact. He had probably passed the zenith of his power by 1920, when I became his house physician at the Children's Hospital, Melbourne. Then and through the years that remained I learned to appreciate the depth of his knowledge and wisdom, and the warmth of his friendliness. We juniors had the feeling that there was something new and of value for us as the result of each encounter with him, even though the conversation was brief and the incident otherwise trifling. For the benefit of our younger members, let me point out that everybody knew him as "Jeff"; it is not disrespectful or inappropriate that we should deliberately perpetuate that well known sobriquet, for he was known by it to many thousands of people in all walks of life who used it as a term of affection. He was a very friendly man; his innate modesty, self-effacement and absence of hauteur or asperity broke down the barriers to friendship. His genuine love of children and deep understanding of them caused him to be readily approachable; in simple fashion, his ease with children was extended to adults. However, his bearing was always courteous and dignified; and those who met him felt the presence of greatness. No endowed oration has yet been founded for Jeff Wood. It is particularly fitting, then, that today's act of remembrance, twenty-one years after his passing, should have been arranged by our President and Secretary.

[1] Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

The Preparation of a Pædiatrician.

Jeff Wood was born on April 9, 1861, at Christchurch Parsonage, Wood Street, Lower Hawthorn, Melbourne. He was educated under Professor Irving at Hawthorn Grammar School, and passed the matriculation examination in 1877. After leaving school, he visited England and studied there. We know that he took "occasional subjects" for six months in 1880 at King's College, London, and we recall that Joseph Lister was then professor in clinical surgery there. Jeff Wood commenced the medical course at the University of Melbourne in 1881, and after his graduation in 1885 he became a resident medical officer at the Melbourne Hospital. He embarked on his life work when, in 1887, he accepted appointment as the house surgeon at the Children's Hospital, and obtained his doctorate by examination whilst in that post. In 1887, the hospital was merely 17 years old and was still small; it had only 45 beds. However, William Snowball, the redoubtable senior medical officer, was already very well known as a competent children's specialist. Jeff Wood was fortunate to secure him as a mentor at that stage in his career. Next year, a second resident medical officer was appointed, and Jeff Wood's long association at the hospital with Frank Hobill Cole commenced. A year later, Richard Rawdon Stawell joined the resident staff; he, too, had been educated at Hawthorn Grammar School. They were all trained by Snowball, and they learned in a hard school, for "Snowy" was an autocrat.

In 1890 Jeff Wood went abroad again, and he was accompanied by "Dicky" Stawell. They did post-graduate work at University College Hospital, at the National Hospital for Nervous Diseases, Queen's Square, and at the Hospital for Sick Children, Great Ormond Street, London. It is probable that they visited the Edinburgh medical school and that they returned via America.

They were both made members of the honorary medical staff at the Children's Hospital in 1891, and thus became juniors to the famous Snowball, the learned Peter Bennie, and Charles Ryan, the dashing doughty surgeon. In 1890, Robert Hamilton Russell settled in Melbourne fresh from King's College Hospital, where he had been trained by Lister. The three brilliant young men joined forces; they lived and practised privately at 19 Collins Street. In 1892, Hamilton Russell was also appointed to the honorary staff at the Children's Hospital. Russell became a great surgeon and Stawell a famous physician, and they were both renowned as teachers. The die was cast for Jeff Wood; he was well equipped as a pædiatrician and, with steadfastness and confidence, he followed that vocation to the end of his days.

His Thoughts.

Jeff Wood was an earnest clinical teacher and a lifelong reader and student. He was always conspicuously well informed, and he kept himself abreast of the literature

of his speciality. I remember that he had a particular respect for John Thomson's text-book, which he dubbed the "Edinburgh Bible". Jeff was a keen and accurate observer and a sound diagnostician, but, above all, he practised the art of medicine He noted minor points in the appearance and behaviour of children, and used his observations shrewdly in differential diagnosis. He took a delight in rarities, and often presented them at meetings of the pædiatric society.

During the final quarter of the nineteenth century, the official arrangements for the clinical instruction of medical students were deplorably haphazard, and many honoraries were irresponsible and uncooperative. Snowball and Peter Bennie welcomed the presence of undergraduates and practitioners in the wards and taught them unofficially. Stawell, Hamilton Russell and Jeff Wood took up this work with enthusiasm and lifted it to a high level; their example was followed by others such as Harry Stephens until, in the end, the hospital obtained recognition as a teaching hospital by the faculty.

Jeff Wood's literary output was not great; he preferred to talk at the bedside, as a consultant, and at pædiatric meetings. Inevitably as the years went by he had to prepare and deliver addresses, and these were tasks that he performed with credit. I remember the grace with which at pædiatric dinners he proposed the toasts of guests of honour such as Dr. Eric Mackay and Dr. Hobill Cole, and a year or two later, when he in turn was thus honoured, he responded with modesty and sincerity.

Jeff Wood was a pathfinder. Long before the introduction of antitoxic serum, membranous croup was a cruel killer of little children. Whilst abroad, he had learned O'Dwyer's method of intubation, and he obtained the instruments. In 1891, at the hospital, he had the satisfaction of saving five of the first nine victims of laryngeal diphtheria thus treated. He was the first to demonstrate locally that cretinism could be mitigated by oral thyroid therapy, and he continued to take a great interest in cretinism. He also thought deeply in those early years about the mysterious antiscorbutic principle and was thrilled, later, when the water-soluble vitamin was incriminated and isolated. He introduced the Lorenz method of management of congenital dislocation of the hip joint, and was one of the first to deprecate violent manipulation and to preach the wisdom of gentleness combined with skill. In later years, he displayed great interest in Legg's disease, which became better known as Perthes's disease, and he generously recognized that the relatively small number of gratifying results he had had with tuberculous disease of the hip joint could be ascribed to misdiagnosis, and he accepted them as examples of Perthes's disease. He became a great admirer of Harry Platt, of Manchester. Similarly, when pink disease became defined as an entity by Swift, of Adelaide, Jeff Wood and Hobill Cole overhauled their records and published an account of some 86 cases thus diagnosed retrospectively. Right to the end, Jeff was fascinated with pink disease, and it was the subject of his last publication, prepared in collaboration with his son.

Perhaps Jeff Wood's most important contribution to pædiatrics was his profound study of the value of cow's milk as a substitute for breast milk in infant feeding which, nowadays, seems axiomatic. Like Truby King and many other people, he was very disturbed by the high infantile mortality rate, and was greatly impressed by Pierre Budin's work in Paris. Jeff became very antagonistic to the prevalence of pappy feeding and the misuse of patent concoctions as additives and in artificial feeding. He investigated the state of Melbourne's milk supply, and was horrified at its serious contamination and poor quality. With justice and reason, he blamed bad milk for a great many infantile illnesses and deaths. He was a prime mover in the establishment, under vice-regal patronage, of The Lady Talbot Milk Institute, of which he became chairman. On application by the mother, recommended by the medical attendant, and countersigned by the Town Clerk, special supervised milk was supplied for infants free of charge or for not more than fourpence per pint. He also became chairman of the newly formed Victorian Baby Health Centres' Association, and was thus one of the pioneers of the "new deal" for babies which has had spectacular success. During his earlier studies of infantile scurvy, he became convinced that heating irretrievably damaged milk for infants, and he was slow to discard the notion that boiled milk was spoiled milk. He tried very hard to make sure that fresh milk was obtainable which was safe for babies without heat treatment. Towards the end of his long career in private practice, it was Jeff's usual custom to advise the use of diluted sweetened condensed milk in the artificial feeding of babies if sound fresh milk was not readily available.

His Feelings.

Jeff Wood was very human and kindly. He took a great personal interest in his patients as individuals, and played a very active part in their home management and upbringing. His became a household name far and wide in the metropolis and in the country districts of Victoria. I shall never forget a personal experience. I was attending an erstwhile patient of his who had a unilateral hip dislocation, which had been unsatisfactorily reduced by him years earlier. I brought him to the house with me to consult on what should be done about it. The mother opened the door and greeted him cordially as an old friend; but, unfortunately, she overdid it. She told him that whenever any child of hers was troublesome, it worked wonders for her to say that she would send for Dr. Wood. His reaction was to inform her that he was honoured to be the bogyman, but he could not be the doctor too. He added that the care of the child could safely be left in my hands and that he would not come in. Nothing that I could say made him alter his decision. I accompanied him to my car and returned alone to cope with the awkward situation. That night, on the way back to town, and at other times, I learned a lot from him about his views on the proper relationship that should exist between the patient, the doctor and the parent; and I adopted most of them in my own practice. The child, and not the parent, is the patient, and should be examined alone, with the parent excluded. The child's confidence must be wooed and won before the examination commences. The doctor should usually discuss signs and symptoms with the child and not rely on the history obtained from the parent alone. The child should not usually be present when the doctor and the parent confer. The doctor must not show any ill temper in the presence of the child; he must prepare the child for any pain he has to inflict and be kindly and gentle throughout; he should prescribe attractive and palatable medicines whenever possible. The consulting rooms of a pædiatrician should look more like a nice home than a workshop or an office; toys must be available to help young children to enjoy the visit and to pass the waiting time pleasantly. The doctor must cultivate and exercise the utmost patience and gentleness. Much time must be spent on educating the parents on home management and child care.

On another reflective occasion, Jeff Wood remarked to me that he was always pleased with the behaviour of his son at parties. Exhibitions of greed, of which he thoroughly disapproved, took place at these parties; but his boy was properly fed at home and knew how to behave in company; he could be trusted to behave himself graciously in any company because of his home training.

His Actions.

The following extract from the recorded minute of the Council of the British Medical Association (Victorian Branch) is an eloquent testimony to the nobility of his character:

> By his unsparing devotion to the interests and tasks of his beloved profession and his quiet and honourable approach to problems requiring a solution, he set a high and shining example to those privileged to come under his inspiring influence. Giving always of his best, he rightly earned the respect and admiration of all with whom he came into contact.

Jeff Wood served on many committees and was secretary of this one and president or chairman of that; we need only glance at that aspect of his activities. Nearer home for us is his prominence in the pædiatric sessions of congress from their introduction in 1908. We note, in passing, that their introduction was, to a great extent, brought about by him. The growth in size and in importance of the Children's Hospital was energized by him and the coterie of friends and colleagues who freely acknowledged his wisdom and leadership.

Jeff Wood was a leader. In student days they made him secretary of the Medical Students' Society. By 1894 he was secretary of the Medical Society of Victoria and he kept the job for three years. By 1905 he was president, and he had to use all his reserve powers of diplomacy. The Victorian Branch of the British Medical Association had been existing alongside the Medical Society of Victoria since 1879 as a seceding body. Jeff Wood played a prominent part in the highly desired fusion of the two professional organizations, which became effective by 1906. That year was also the year in which the Melbourne Pædiatric Society was formed, and he was a founding member; he became its president in 1908. He attended meetings of the Pædiatric Society for at least twenty-five years, and frequently participated significantly in the meetings. As an instance of his clinical acumen, I remember vividly a meeting at which I presented a child with syphilitic dactylitis, and I thought the diagnosis was beyond dispute; it was supported by the usual criteria and laboratory findings. Jeff Wood examined the child carefully, and maintained that the dactylitis was tuberculous in a syphilitic child, and he advised examination of biopsy material. Next day, Reginald Webster commenced the pathological examination, and the result substantiated Jeff Wood's diagnosis. We all learned a lot from Jeff Wood at meetings of the Pædiatric Society.

Jeff Wood was a genial man. For fifty years his wholesome, wise and honourable conduct influenced the atmosphere of the Children's Hospital, which has always been pleasant and stimulating. Led by men such as Jeff Wood and the scholarly kind Hobill Cole, the hospital flourished, and its high standards were firmly fixed. Their influence still pervades the place, for their successors have perpetuated it. As tangible memorials wards are named for them. The nursing school was started in the care of a Nightingale trainee from Hobart in 1887 when Jeff Wood was the resident medical officer. He took a great interest in the nursing school on the spot until he retired from the active staff of the hospital in 1921. The best nurse in each annual group of graduands is proud to receive and to wear the Jeffreys Wood Gold Medal.

If we may judge a man by the company he keeps, we must place Jeff Wood in the forefront. He was a good family man and a Christian gentleman. Quietly spoken and persuasive, he was a charming companion and a staunch friend. He was often to be found with his many cronies at golf or tennis and at the Melbourne Cricket Ground on big occasions. We shall remember him not only as a great pædiatrician but as a whole man.

THE CONTRIBUTION THAT MIGHT BE MADE BY THE PÆDIATRICIAN AND GENERAL PRACTITIONER TO THE MANAGEMENT OF DELINQUENCY.[1]

By ALAN JENNINGS,
Sydney.

DELINQUENCY usually refers to that behaviour occurring in juveniles which would be classified as criminal if it occurred in adults. It is not a medical term. Delinquent behaviour can be associated with a wide range of psychological conditions varying from the reasonably healthy to the markedly pathological. For the sake of simplicity the conditions will be placed in the following three categories: (a) delinquent behaviour occurring when there is no marked psychological abnormality, that is when social maladjustment reflects adverse external circumstances; (b) delinquent behaviour occurring in an emotionally disturbed child, when the emotional disturbance is a reaction to environmental difficulties; (c) delinquent behaviour associated with maladjustment that has become chronic and built into the personality. These are not clear-cut categories, but the most appropriate way to help the delinquent child depends on which set of factors is dominant. This is determined not so much by the nature of the offences committed as by an assessment of the child's personality, family background and social setting.

In New South Wales the children's courts deal with the group eight to eighteen years old. The male adolescent group presents the largest social problem. Management, therefore, falls between the usual child guidance "family" approach for the younger children, and the more "individual" approach for the older adolescents, who are expected to cope with the difficulties in the environment themselves.

In the more complex and materialistic urban community with religious influences losing their force, with less defined moral codes and where individuality and freedom are encouraged, the susceptibility to delinquent behaviour may be higher than in the simpler society with a rigid and clear-cut framework for behaviour. When the male is expected to be assertive and acquisitive, it is not surprising that some youths in their immaturity become too assertive and too acquisitive. A large percentage of juveniles coming before court would be considered to be mentally healthy, their standards and attitudes being acquired from their immediate environment. They may be fairly happy adventurous boys who look for personal gain in acts of minor delinquency. They are more likely to offend in company. They are capable of making good social relationships, and they usually respond to a warning and to the better supervision after a court appearance, or to an improved educational or training programme. These youths can be helped by an understanding physician, a child welfare officer or school teacher. They are better able to cope with tension and guilt, so the adverse secondary effects of the delinquent acts are less than with psychologically disturbed children. Suggestion and simple advice can be very effective when a good relationship has been made and the child feels that he is getting a sympathetic hearing.

The situation becomes more complicated when the delinquency is a symptom of a greater or less degree of emotional disturbance, in which case other symptoms are likely to be present. In this type of behavioural difficulty, as with other symptoms of emotional disturbance, simple and direct cause and effect relationships are rare. Usually a number of internal and external stresses summate until a threshold is reached and the symptom produced, though one factor may have a dominant role. When the symptom is a delinquent act, the child is likely to be in trouble and feel guilty. A vicious circle may be set up in which insecurity and anxiety promote aggressive and delinquent behaviour; this promotes worse relationships with parents and authority, causing more anxiety and guilt, contributing in its turn to more difficult behaviour and so on. It is important to break into this vicious circle. This entails work with the child and the parents. It may be necessary to enlist the help of others as well, for instance the school master or child welfare officer, who in most instances would be grateful for the doctor's opinion and who may be able to contribute valuable information.

The emotionally disturbed child is likely to be tense and anxious. He may suffer from some of the following: sleeping, feeding and speech disorders; he may be restless, overactive, impulsive, be lacking in concentration, and failing at school; he may have temper tantrums or demand too much attention; he may have little self-esteem, make poor relationship within his family and with his peers.

Much emotional disturbance is reactive to environmental difficulties, and so much of a child's environment is determined by the parents' attitudes that this is often the main factor, especially with the younger children. One is familiar

[1] Part of a symposium on the management of emotional problems in childhood. Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

with the affect-hungry, attention-seeking, poorly relating child of cold, hostile or rejecting parents, the child with strong feelings of inadequacy and inferiority of the coercive and perfectionistic parents, and the immature and over-dependent child of over-protective parents. Not so obvious are other factors in the parent-child relationship. Szurek thinks that: "Regularly the more important parent, usually the mother, although the father is involved, has been seen unconsciously to encourage the amoral and antisocial behaviour of the child. The neurotic needs of the parent, whether of excessively dominating, dependent or erotic character, are vicariously gratified by the behaviour of the child, or in relation to the child." The treatment then is to improve the psychological environment, to allow a more healthy adjustment to proceed. The physician must assess the degree of disturbance, how much it is reactive to parental attitudes, and whether the parental attitudes can be modified.

The older child has many contacts outside the home; the attitude of others in authority may have to be evaluated. Is the child living up to a reputation, are the attitudes appropriate to his age, are they compatible with his maturation and social adjustment, is due allowance given for any handicaps? Dullness, a specific educational defect, some constitutional or organically based instability may be overlooked and the child be placed under stress for the lack of an appropriate remedial or management programme. This is a further and important reason for the doctor to contact the school or other agencies.

Parents will come to the physician seeking some specific advice, usually with some urgency. They may be looking for authority to start some punitive programme or to curtail their child's independence. Delinquency is very anxiety-provoking to parents because others are involved; the sex and aggressive problems of adolescents are very threatening to parents who have not resolved their own; additionally, parents feel they have failed and that it has been their fault. Their guilt should not be increased, and though a certain amount of anxiety motivates a treatment programme, reassurance and support for the parents may allow them to obtain a better perspective and take a more relaxed approach to the problem. The physician is then in a better position to help improve the parent-child relationship and facilitate their ability to communicate and understand each other. The physician also strives to make a relationship with the emotionally disturbed child; as he comes to understand the child's position he is able to help the child manage his difficulties. The child may have to talk at considerable length and feel accepted before he can really reveal his feelings, but when he does he can be helped to tolerate his anxiety, tension and unhappiness and have less need to act out his problem in an antisocial way. The physician should offer the child a constant and dependable relationship, but he should not be over permissive or seek to compete with the parents. He should not become punitive if the child fails to respond quickly.

If on examination of the family situation the parental attitudes appear to be inflexible and to be contributing extensively to the emotional difficulties, it may be appropriate to arrange for the parents to have more specialized psychotherapy or to arrange for the child to be moved to a more healthy environment, either to be placed with an interested relative, a boarding school or an agency home. A court appearance is often a critical time when the position has to be evaluated in this way. The magistrate and child welfare officer would value the physician's carefully considered opinion, if he were really familiar with the situation.

The physician has to assess the degree of emotional disturbance in the child; the severity is not indicated by the symptoms themselves as much as by the extent that they have been built into the personality. It must be decided whether the symptoms are a reaction to environmental difficulties or whether they are the result of well established and internalized conflicts. This is indicated by their being inflexible, repetitive, unrealistic and unresponsive to ordinary management programmes. In this case the child is handicapped by a psychoneurotic condition or a personality defect; specialized psychotherapy will probably be required to treat the handicap. This does not indicate that the physician cannot help, for if he recognizes the handicap he can help others to recognize the condition, to make the appropriate allowances and to offer the most suitable help. This would include the child's parents and his teachers, and other authoritarian figures that he would meet in the community. A youth leader at a boys' club, a minister or a social worker from a voluntary organization may be able to offer considerable help if invited to participate in the management programme.

Summary.

The principles involved in the management of delinquency include:

1. Breaking into the vicious circle of delinquency-anxiety-more delinquency by work with the parents and the child.

2. Improving the psychological environment by improving parental attitudes.

3. Recognizing any handicaps and arranging suitable remedial programmes.

4. Relieving symptomatically severe anxiety or hyperkinesis.

5. A management programme: contacting significant people in child life outside the home to arrange suitable free time activities, and give suitable support.

6. Considering alternative placement of the child if environmental difficulties cannot be relieved.

7. Psychotherapy for the child ranging from suggestion, advice and *rapport* therapy to more specialized psychotherapy. If more is required than can be undertaken by the general practitioner, then the child should be referred to a pædiatrician or psychiatrist who is interested in treating children with behaviour problems, or to a child guidance clinic.

It is characteristic of delinquency that, in varying degrees, medical, psychological and social factors operate. For this reason a number of different people become involved in the management. It is appropriate that they should work together in a team. The physician, if he knows the family well, may be in a good position to lead the team.

EXPERIENCES IN THE APPLICATION OF PRINCIPLES: FOOD REFUSAL.[1]

By FELIX ARDEN,
Brisbane.

THE relatively minor disorder of food refusal has been selected for this part of the symposium because it is so commonly a source of parental worry, and because its management is essentially simple, and therefore one for the pædiatrician rather than the psychiatrist. None the less, trivial though it may be, one of the relationships of child environment is undoubtedly disturbed, and if not corrected may lead to more severe derangements later. It may therefore serve conveniently as a sample disorder for purposes of discussing diagnosis and management.

Food refusal by young children may be regarded broadly as an emotional problem of parents and a behavioural problem of their children. It affects particularly the precious child, usually an only child, often born after some years of marriage, or perhaps a child born after a long interval when the siblings are fully grown. The parents are generally intelligent, earnest and anxious, fearful that he will lack vitamins or other essentials. They are acutely aware of what he "should" eat, which leads them to set targets—so much milk, so much protein, so many green and yellow vegetables. Their knowledge of what the child "should" take commits them to food forcing, which in turn leads to increasing dislike of this

[1] Part of a symposium on the management of emotional problems in childhood. Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

article and that, finally of meals altogether and of food in general. The child may even cry at the sight of his mother starting to prepare a meal. The household eventually reaches the stage where every meal is a fight, with mother coaxing, then in tears, the child struggling and screaming, food all over the place, and father muttering about home becoming a madhouse. Tension runs high and appetite disappears.

The application of the principles outlined by Dr. Rickards involves primarily a complete diagnosis in the form he has described so clearly. The clinical diagnosis is straightforward — assuming that the history and examination have excluded anæmia and anorexia of organic origin. The dynamic diagnosis usually reveals one or both of the two common parental attitudes—over-anxiety to do a perfect job of bringing up this most precious child, and fear of failure with the secondary fear of ill-health because he is "lacking something". Phrases like "getting food into him", "can't make him take", and questions as to how much milk "should" he drink illustrate the pre-conceived target and the urge to make the child reach it. The developmental diagnosis generally uncovers a tale of forcing at the breast in infancy, of insistent efforts to have the bottle emptied, of determined struggles over spoon feeding, the whole situation appearing to the mother as one long contest of wills. The formulation estimation exposes the mother's anxiety for her child's well-being, the father's anger at having his commands thwarted, the self-reproach of both parents for their lack of success, their obsession with weight charts, their love for the child or lack of it. It is generally apparent, to quote Dr. Rickards again, that "the symptom is not the problem but indicates that a problem is present".

The management of food refusal involves virtually no direct contact between the doctor and the child. It is something between the doctor and the parents, and becomes a threefold matter of relieving their anxiety, of increasing their understanding of the situation, and of defining a new course of action for them to follow. They must first be convinced that their child will not starve under any circumstances, and that they can follow the suggestions outlined with complete safety. I try to assure them that he has a built-in appetite mechanism, akin to that governing his need for oxygen, and that they can leave his eating to Nature just as freely as they leave the regulation of his breathing. Their job is completed when nutritious food is provided in an attractive form. It also helps, I believe, for parents to know that the essential building stones of body tissue are present in so many foods that no single article is essential; that there are communities of people in the world who drink no milk, others who eat no vegetables, and yet remain healthy. They can usually be told that, on the evidence of his well-being, their child must have a most efficient digestion, that on the analogy of a motor car he obviously gets many miles to the gallon, and that it is his performance which matters rather than the amount of petrol he is able to consume. The prescription of a tonic containing thiamin is proper at this stage, both as an appetite stimulant and because it is expected.

To assist their understanding of the situation I like to offer parents some comments about negativism; for example that a small child often expresses his developing personality by saying "no" to anything they too obviously desire, and that he will, under ordinary circumstances, eat food to please himself but not to please his mother, particularly if she seems concerned about it. They can be helped to see food refusal in this context as part of a larger problem. One could quote the example of Maria, aged two and a half, who was in my rooms the other day because she would not eat, and defied her mother, both over undressing and subsequently over dressing. She had a tantrum and refused to stand on the scales despite pleadings and ineffectual taps from her mother, and was obviously accustomed to winning battles at home. Her mother said at the end: "It's always like this when I want her to do anything." Once the parents understand negativism they come to realize how they have unwittingly caused the problem.

The course of action suggested involves the elimination, so far as possible, of all emotional stress in the parent-child situation. Head-on collisions of will should be avoided by tactful and sympathetic handling; but if unavoidable the parent must win—in an unemotional, massive and "bull-dozer" fashion. In particular there must be no emotional tension at mealtimes. His parents must genuinely not mind, not simply appear not to mind, how much their child eats. They must not give him the impression that he is conferring a favour on them by emptying his plate, or committing some sort of misdemeanour if he leaves something. On no account must they force food if he obviously does not want it; but they should encourage his curiosity and interest in new foods and allow him to feed himself, even if he makes a mess.

Finally, to supplement this advice, they need some sort of positive goal to strive for. They should learn to take pride in the knowledge that their child is normal and healthy, that he takes automatically the right amount of food for his bodily needs, that feeding problems have no place in their sensibly managed home. And they also need to learn how to give him love without possessiveness, security without over-protection, interest without over-stimulation and freedom with reasonable discipline, so that he will grow up happy, natural and unspoilt.

RENAL INFARCTION AND PERIRENAL HÆMORRHAGE.[1]

By T. Y. NELSON,
From the Royal Alexandra Hospital for Children, Sydney.

THROMBOSIS of the renal veins with complete or partial destruction of the kidney is a well recognized condition, and Abeshouse (1945) found in a series of 228 cases in patients of all ages that 90 of them occurred in the first few months of life. In spite of this Margaret Fallon (1949) was able to find the records of only six cases in a five-year period at the Birmingham Children's Hospital, and the condition is probably not recognized frequently in this country.

It is customary to refer to this condition as primary when the thrombotic process starts in the renal veins, as is common in infancy, and secondary when it occurs as an extension of a clot in the vena cava (more commonly seen in adults). A large majority of the cases seen in infancy are associated with dehydration and infection, particularly ileo-colitis, and in these cases hæmoconcentration, stasis of blood from decreased blood volume and arteriolar constriction set the stage for thrombosis to begin. Clatworthy (1953) suggests that in infections, especially with *Escherichia coli*, antigens act as additional damaging agents producing a nidus for the accumulation of platelets and the initiation of clot formation.

Most of the material studied has been from autopsy specimens, as the picture may be dominated by the causative infection and the thrombosis go unrecognized. It has been found that renal venous thrombosis may be part of a widespread process affecting in addition the dural sinuses (Fallon, 1949; Ahvenainen and Hallman, 1954) or pulmonary arteries with lung infarction or pulmonary arteries and liver (Morison, 1945). Morison (1945) described the autopsy findings in three infants who died in the neonatal period with thrombosis in the aorta extending in one case into the cœliac axis, left renal and inferior mesenteric arteries causing infarction in the kidney, liver, stomach and colon. This condition followed a severe infection in one case, and the other two cases were associated with diarrhœa.

[1] Read at the annual meeting of the Australian Paediatric Association, Canberra, April 19 to 21, 1958.

This is the common concept of renal thrombosis—a highly fatal condition associated with infection and dehydration—but Sandblom (1948) pointed out that in the neonatal period another picture may be seen. He describes a "primary" type which is a rare condition with no obvious aetiology, and a "secondary" type which is the common type already described secondary to infection and dehydration. It is a case of primary or idiopathic thrombosis in this sense that is described in this article. Tveteras and Rudstrom (1956) reported such a case and found no reasonable explanation for it. Birth trauma (Sandblom) could conceivably be a factor in breech cases, but would not explain the presence of a mass in the flank at birth as occurred in our case. Warren and Kelley (1953) suggest some local predisposing condition in the renal vein, e.g. an intrinsic congenital vascular anomaly. This is difficult to prove in view of the disorganization caused by the thrombosis and the small segment of vein available for study in an operative specimen. And so the real cause of this condition remains unexplained.

Reports of Cases.

CASE I.—Renal infarction. A full-time male was delivered by Dr. G. Holt on July 24, 1957—a third child after an uneventful pregnancy and rapid labour. Soon after birth the child was noticed to be cyanosed, with rapid respiration and a "cerebral" cry. The first urine passed was noticed to be reddish in colour, and a later specimen contained a large amount of blood with a small clot. The baby was well developed and moved vigorously, but became cyanosed on crying—a condition which was relieved by oxygen, and was attributed to atelectasis. Physical examination (Dr. C. W. Lee) revealed a large mass in the left loin, and a loud systolic murmur at the tricuspid area. The mass was thought to be a Wilms's tumour, and it was decided, after consultation, to wait for a few days before undertaking nephrectomy. Two days later there was a marked improvement—the cardiac murmur had disappeared, no further attacks of cyanosis had occurred and a subcutaneous pyelogram showed normal excretion on the right side but none on the left.

Nephrectomy was performed by the writer on July 27. On exposing the mass it appeared to consist of a greatly enlarged semi-solid kidney with a good deal of perirenal hæmorrhage. It resembled a hydro-nephrosis more than a Wilms's tumour, and separated without much difficulty from the surrounding tissues. In freeing the upper pole, the tense cyst which involved this portion of the mass was ruptured with evacuation of a considerable amount of blood. The hilum was matted together and ligated *en masse*. On sectioning the kidney it was found to be uniformly dark red to black in colour and the anatomical markings were totally obscured. Dr. Reye, in reporting on the specimen, stated that in the place normally occupied by the adrenal there was a blood-containing cyst, the wall being composed of hæmorrhagic and necrotic adrenal gland. On section there was evidence of hæmorrhage into and about the capsule, which was separated from the kidney by a thin layer of blood clot.

Dr. Rey's comments on the microscopic appearance were as follows:

> There is thrombosis of the renal and perirenal veins the arteries being contracted and empty. As a result of this venous obstruction there is a massive hæmorrhage into the renal substance and adrenal gland. The adrenal gland parenchyma is entirely necrotic except for one small extra capsular nodule which is still viable. A great deal of the renal parenchyma, too, is necrosed though the glomeruli tend to escape in many parts and the stroma of the organ is still viable. It is never easy to define the duration of such lesions with certainty but, to judge by the appearance of the clot within the veins and the reaction to the extravasated blood, especially in the capsule, it would seem likely that this massive thrombotic accident occurred four to five days before the kidney was removed. That more than seven days has elapsed seems unlikely.

The post-operative course was uneventful.

Comment.

The diagnosis of kidney infarction has rarely been made before operation or autopsy, and perhaps in this uncommon type of primary (Sandblom) thrombosis, where the child does not present the picture of a severe toxæmia with dehydration, there is a greater possibility that the diagnosis will be missed. Most cases in the literature have been thought to be a Wilms's tumour or hydronephrosis; and it is of interest that, although uncommon, hæmaturia may be one of the earliest signs of Wilms's tumour (Josephs, 1949). The absence of dye in the affected kidney after a urogram is unusual in Wilms's tumour, and might perhaps in this case have given the clue as to diagnosis.

It can thus be asserted that the usual pattern of renal thrombosis in infancy is that of a serious illness frequently fatal after infection or dehydration, but that there is a small group of cases in which the causation has not been explained, in which the thrombotic process may start *in utero* and in which recovery may be expected to follow more frequently than when associated with severe infection.

CASE II.—Perirenal hæmorrhage. I am indebted to Mr. Sofer Schreiber for the details of the following case in which a newly born baby was found to have a mass in the loin, and in which again the possibility of Wilms's tumour was considered.

A female child was born on February 13, 1957. The abdomen was distended, but no definite mass was palpable. The baby was pale, and on the second day the hæmoglobin value was 11·3 grammes per 100 millilitres, and the leucocytes numbered 19,000 per cubic millimetre. The mother's blood group was O Rh positive.

The diagnosis rested between Wilms's tumour and enlarged liver. A plain X-ray film suggested a soft tissue mass on the right side displacing the large bowel to the left. An intravenous pyelogram showed the absence of right kidney function, which was considered to suggest hydronephrosis rather than Wilms's tumour.

On February 16 extraperitoneal removal of the mass was undertaken. At operation it was seen that massive hæmorrhage had occurred into the right kidney—the capsule was thin and no kidney substance could be identified. The post-operative course was quite satisfactory. Examination of the specimen showed evidence of hydronephrosis of long standing, with recent acute inflammation of the pelvis and peripelvic tissues without extension into the parenchyma. It was evident that the hæmorrhage had originated in the adrenal gland had ruptured into the renal pelvis, filling the pelvis with blood clot, and had spread over the surface of the kidney in the subcapsular region. Dr. Reye thought the hæmorrhage had occurred some time before birth, not less than one month, and that additional bleeding had occurred and added to the original hæmatoma up to a short period before operation.

Comment.

This condition of adrenal hæmorrhage has been well described by Edith Potter (1952), who states that hæmorrhage in the adrenal gland begins in the central part and generally spreads to involve the entire structure. An accumulation of 30 to 40 millilitres may remain in the capsule. With larger hæmorrhages the capsule generally ruptures, and the escape of blood into the surrounding connective tissue produces perirenal hæmorrhage. Dr. Potter states further that the mechanism producing adrenal hæmorrhage has never been satisfactorily explained, although it is most often seen in infants delivered from a breech position, and thought to be due to trauma inflicted on the fœtal abdomen during delivery of the head. The present case was not a breech delivery; the hæmorrhage occurred *in utero*, and the cause remains unexplained.

Discussion.

These two cases are similar in that in the one case the kidney and in the other the adrenal were destroyed by hæmorrhage apparently beginning *in utero*. In the literature on renal thrombosis there does not seem to have been sufficient emphasis placed on the group described by Sandblom, which he unfortunately called primary and which might have been better termed idiopathic to distinguish it from the commonly accepted meaning of primary as originating in the renal veins. This is a small group, and only a few cases have been reported.

From the history it is evident that in many of these cases the thrombosis has started *in utero*. In Sandblom's own case, although he postulates birth trauma as a possible cause, there was calcification in the thrombus in a number of veins in the renal hilus. As the kidney was removed

on the fifth day, there is a strong probability that the thrombus was of longer duration than five days. His case also illustrated the fact that recovery may follow nephrectomy even in the presence of thrombosis in the inferior vena cava. Tveteras and Rudstrom (1956), in reporting their case successfully cured by nephrectomy, confused the issue by stating that the mortality has been estimated at 95%. This may be true of the type associated with severe infection, but in the 10 cases the writer has found in the literature comparable to Sandblom's there have been only two deaths, and although one patient died dramatically in 18 hours it is reasonable to think the prognosis in this group should be better than in the larger group associated with infection. In that group there is a very high mortality in the reported cases, and many deaths must occur associated with severe infections, which are never reported under this heading.

What is the place of surgery? That recovery can occur without surgery even in a bilateral case associated with infection is illustrated by the remarkable case reported by Margaret Fallon. Most writers emphasize the need for nephrectomy, with the idea of preventing the spread of thrombosis to the inferior vena cava or the other kidney, but in Hepler's case, of a child aged two and a half years, nephrectomy did not prevent the occurrence of thrombosis on the other side, and the child died as a result. Further, Margaret Fallon suggests that when the decision is made to remove a thrombosed kidney there is a risk that the thrombotic process may have already started in the other kidney, and unless there is a suppurative condition present in the affected kidney, nephrectomy during the acute phase may not be of any benefit.

Pre-operative urography should be performed to demonstrate satisfactory function in the unaffected kidney, and it does seem reasonable that a thrombosed functionless kidney should be removed even if only for the hypothetical reason that a non-functioning kidney might give rise later to a Goldblatt mechanism with hypertension (Campbell and Mathews, 1942). It is possible that some of the atrophied kidneys found at autopsy are the result of unrecognized thrombosis in the neonatal period.

The other interesting point that emerges from a study of the literature is the similarity of the small group of idiopathic cases to the condition of infarction of the testis in the newborn (Fernicola, 1954), in which there has been no demonstrable cause and in which thrombosis has evidently occurred during intrauterine life or during labour.

Summary.

1. Attention is drawn to the condition of renal vein thrombosis and infarction of the kidney and to a small group of infants in whom thrombosis is not associated with sepsis.

2. A case of recovery following nephrectomy for this condition is reported.

3. The similarity of this thrombotic process, which probably starts *in utero*, to that occurring in the adrenal gland and in the testis is pointed out.

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PEPTIC ULCERATION IN CHILDHOOD.[1]

By ERIC GOULSTON,

Sydney.

My experience of peptic ulceration in childhood is indeed limited, and the subject is presented to provoke discussion of its incidence and effects. The literature leads us to believe that this disease is commoner than is generally accepted, but this fact is difficult to assess as many cases occur which do not warrant admission to hospital. These have acute uncomplicated lesions with superficial ulceration, which soon heal when the medical regime is altered in some way. A survey of hospital records may therefore give an inaccurate over-all picture. Again, peptic ulceration is more difficult to visualize radiologically than in adults, so that a clinician gains the impression that the condition is uncommon.

Peptic ulceration may be primary, or secondary to burns, generalized infection or cerebral lesions. Kennedy in 1933 classified the condition into four groups according to age, namely: (i) Neonatal, with gross bleeding as the presenting sign, or asymptomatic and found at post-mortem examination. (ii) Infantile, in patients up to one year of age, also usually diagnosed by bleeding. (iii) Childhood, in patients up to ten years of age, with gastro-intestinal symptoms of pain, anorexia and occasionally bleeding. The differential diagnosis in this group includes ectopic gastric mucosa, tubercular bowel, polypi and colitis. (iv) An adult type in later childhood, with adult-like symptoms of hunger pains; these symptoms may continue into adult life.

A survey of the patients admitted in the past five years to three teaching hospitals in Sydney provides some indication of the frequency of the complications and the severity of the condition. This shows that some 31 children with proven peptic ulcers were admitted to the Royal Alexandra Hospital for Children, Royal Prince Alfred Hospital and Royal North Shore Hospital over these years. They included nine children with gastric ulcer with a sex incidence of five males and four females, and 22 children with duodenal ulcer, 14 males and eight females, confirming a sex equality in gastric ulcer and a male preponderance in duodenal ulcer which obtains in adults. These diagnoses were proven radiologically, at operation or by autopsy. There were no neonatal cases, and no infantile cases in children up to one year of age. Fifteen cases were in children under 10 years of age and 16 in children between 10 and 15 years.

The presenting feature in half the total cases was hæmatemesis and/or melæna; two of these followed prednisone therapy for asthma, two followed severe burns, one followed a severe head injury and one case was associated with a duodenal diverticulum. Recurrent abdominal pain described as periumbilical was a feature in 12 patients in the older age group; appendicectomy had been performed in five of these patients. Several of these had a family history of ulcer and had been treated for asthma. Two cases of duodenal ulcer in patients aged one and a half and four years were found at autopsy, one after fulminating pneumonia, and one after extensive acute osteomyelitis of the ileum. Two children aged 11 years and 14 years had acute perforations. Six other patients not included in the series, with proven ulcers at ages from 16 to 18 years, dated the onset of symptoms from childhood.

Surgery was undertaken in seven out of the 31 patients. Massive bleeding required some form of surgery in five cases. In one the bleeding point was tied; in another the ulcer was excised, in another a segmental resection was performed, and in two gastro-enterostomies were performed.

[1] Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

The site of the bleeding was the posterior wall of the first part of the duodenum in three cases, and in the prepyloric segment and in the mid third of the stomach in the remaining cases. A Billroth I gastrectomy was performed in one girl aged 15 years for intractable pain from a proven duodenal ulcer, despite much treatment in hospital, followed some months later by a Pólya gastrectomy for an anastomotic ulcer. Apparently there was a heavy emotional overlay in this patient. One wonders whether she had a pancreatic islet cell adenoma as described by Zollinger (1955). A perforation was oversewn in one case of duodenal ulcer. No vagotomies were performed.

There were two deaths, excluding the cases found at post-mortem examination: one of these was of a patient aged 11 years, who had the lethal complications of stenosis, perforation and massive bleedings. The other patient had a duodenal ulcer associated with a diverticulum leading to an enterogenous cyst.

Discussion.

Guthrie in 1942 reported nine cases of peptic ulceration in infants up to one year of age who died of their disease, which was proved at autopsy, and suggested that surgery should be undertaken if indicated even earlier than in adults, as there is less inflammatory reaction around these ulcers in children. The lesion is destructive, with poor attempt at repair. However, the majority of the patients in this series responded to medical treatment, surgery being required only for severe complications. It is stated that gastric acidity reaches a surprisingly high level within 48 hours of birth, equal to that of an adult, then falls rapidly and remains low during infancy. Fractional test meals were not a feature in this series and appear of no diagnostic aid.

It would appear that gastro-duodenal complications may follow steroid therapy, which is becoming popular in the treatment of medical diseases such as asthma, rheumatic fever and ulcerative colitis. These are commonest with prednisone and prednisolone, and Bollett *et alii* (1955) concluded that the longer prednisolone therapy was continued, the more likely was peptic ulceration. It therefore seems advisable to order an ulcer regime with steroid therapy, although only two such cases were noted in this series.

Gross (1953) states that hæmorrhage is more poorly tolerated in infants, and blood should be replaced sooner than is the custom with adults suffering from this condition.

Radiologically, it appears that screening and spot filming of the stomach and duodenum are more difficult in children. Also the lesions are shallower and smaller, and the duodenal bulb less easy to demonstrate. Radiologists assert they are more commonly asked to report on the appearance of the appendix, and that visualization of the stomach and duodenum is not often requested in children. Owing to less surrounding reaction, the demonstration of a niche is more difficult.

This series is of course too small to draw conclusions regarding social or familial incidence, although several of the patients had relatives suffering from peptic ulceration. It was interesting to note that all the patients bleeding from ulceration belonged to blood group O, Rh positive.

Conclusions.

1. Peptic ulceration should be considered in the differential diagnosis of recurrent abdominal pain in children.
2. The complications of this disease are serious in children and may require early surgery and earlier blood replacement than in adults.
3. Confirmatory radiological diagnosis is more difficult to obtain in children.

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Addendum.

Since this paper was read, a further case has occurred of massive hæmatemeses in a girl aged seven years. At operation a chronic penetrating duodenal ulcer was found, and a Pólya type of partial gastrectomy was performed, followed by an uneventful convalescence.

BILATERAL CONGENITAL CHOANAL ATRESIA IN THE NEWBORN.[1]

By PETER JAY,

Adelaide.

BILATERAL congenital choanal atresia presenting as a respiratory emergency in the newborn is undoubtedly a rare condition. Few cases have been reported, notably those of Hanckel (1949), Beinfield (1954) and Morrow (1957). All writers are agreed that the condition is probably more common than the literature indicates, and that it may account for some cases of neonatal asphyxia attributed to lower respiratory tract obstruction.

In the short time available I propose to discuss some aspects of this condition based on experiences with two patients who have come under my care. Both came from the Broken Hill district. The first case was diagnosed by Dr. Eric Sims when the patient was seven days old, the second at eleven days by Dr. Henry Rischbieth. The provisional diagnoses of the respiratory difficulty at birth were atelectasis and hyaline membrane respectively.

Theories on the Cause of the Condition.

There are three theories advanced in explanation of how this condition arises: (i) a persistence of the naso-buccal membrane; (ii) persistence of the bucco-pharyngeal membrane; (iii) an overgrowth of the vertical and horizontal palatal processes of the maxilla. These theories are presented without comment, and there does not appear to be general agreement as to which theory is the most acceptable.

Diagnosis.

As in any case of respiratory obstruction, close observation and careful listening provide the most valuable information as to the site of the obstruction.

A clear nasal airway is a vital necessity for a newborn infant; without it the patient may asphyxiate and certainly cannot feed. Obvious respiratory obstruction occurring in attacks with rib retraction and cyanosis, relieved when the child cries or opens its mouth, is the outstanding feature in these cases. A large quantity of thick ropy mucus is invariably present, and this mucus soon becomes purulent. A fine catheter will not pass through the nose and the nasopharynx on to the oropharynx, and a blunt probe appears to strike a sudden hard and untimely end. Final proof of the existence of choanal atresia is provided by the mucus being sucked out of the nose and replaced with lipiodol, when X-ray pictures reveal the diagnosis.

Management.

Management resolves itself into three phases, namely pre-operative, operative and post-operative phases.

Pre-Operative Management.

I will mention three measures which have been employed pre-operatively, because they will serve to illustrate to doubtful persons the vital necessity of a clear nasal airway in the newborn. (*a*) Tracheotomy was performed in Hanckel's case, and has been in others. It could be life saving; but in the light of my own experience I find two tubes in the nose preferable to one in the neck. (*b*) Beinfield and Morrow managed to retain an airway in

[1] Read at the annual meeting of the Australian Paediatric Association, Canberra, April 19 to 21, 1958.

the infant's mouth, with results that were apparently pleasing. (c) Nursing the patient in a semi-prone position may have some advantage.

Operative Management.

Operative management methods described are legion, but the majority are applicable only to the unilateral cases in older children and adults because of the difficulty of access in the newborn. The problem consists of the choice of two methods with all their modifications, namely (i) a transpalatal resection of the atresia, (ii) a transnasal perforation of the atresia.

The exponents of transpalatal resection appear to have had a post-operative use of tubes and obdurators forced on them no less prolonged than that involved in transnasal perforation, and one wonders whether very much more was achieved as a reward for a difficult operation with a palatal fistula apparently more than a possibility.

One of the patients under discussion was shown at a meeting of the Otolaryngological Society of Australia held in Adelaide in 1956. The opinion was expressed that the transpalatal approach was contraindicated as an emergency measure in the newborn. C. P. Wilson, during his visit to Australia in 1957, expressed similar views in conversation.

The transnasal operation involves a perforation of the bony or membranous atresia, using instruments of a type which will reduce the atresia, causing a minimum of trauma to normal structures, thereby avoiding the real danger of converting the atresia into a cicatricial stenosis. The instruments chosen were a three thirty-seconds of an inch carpenter's wood bit protected in most of its length by a fine rubber catheter; spun between the fingers it perforated the atresia with ease. A eustachian rasp enlarged the opening in upward, downward and medial directions. No attempt was made to rasp laterally. A Pierce's septum elevator was finally employed to shave the atresia flush with the septum and the floor of the nose. Bleeding was virtually nil. Ether was administered through a Boyle-Davis gag. The largest polythene tubes which would pass comfortably through the nares were left *in situ*.

Post-Operative Management.

It was found necessary to leave the tubes in position for three months before it was possible to leave them out for twelve hours at a time. The tendency to closure is very great during this period, and mistakes in management occurred frequently, due to attempts to hasten the removal of the tubes. The length of the tubes proved a difficulty in that if excessive they interfered with palatal movement.

In both cases the tubes rapidly became dirty and blocked, and the only satisfactory measure was twelve-hourly removal for cleansing and reinsertion. At times this was difficult, and it was found an advantage to cut the tubes on the cross, thus providing a tapered dilating end which facilitated reinsertion. Polythene is almost certainly preferable to rubber, which promotes granulation. At five months it was possible to use the tubes as dilating bougies at weekly intervals, and it appears that this time interval has been necessary in the after treatment in most reported cases.

Subsequent Course.

The older child is now aged two and a half years, the second 17 months. Their noses are clean and clear, and the tubes are left in place for a few minutes at monthly intervals. Their mothers carry out this treatment, and in the words of one: "The openings appear to be growing with the child."

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MEDICAL ASPECTS OF PYURIA IN CHILDHOOD.[1]

By JOHN MCDONALD,

The Institute of Child Health, Royal Alexandra Hospital for Children, Sydney.

THE importance of infections of the urinary tract in childhood becomes strikingly obvious when we are confronted with the grave consequences that may follow in later life, such as chronic pyelonephritis, hypertension and renal failure. It has been stated frequently (Kass, 1955; Keefer, 1957) that pyelonephritis is the most common renal lesion found at autopsy in adults. Active pyelonephritis has been found in 10% to 20% of all autopsies. Chronic pyelonephritis is a more frequent cause of renal failure than chronic glomerulonephritis; in fact it vies with malignant hypertension as the commonest cause of renal failure in adult life.

Clinical Picture.

It is a well known fact that the classical symptoms of chills, fever and flank pain may be absent in pyelonephritis, symptoms referable to the lower part of the urinary tract, such as frequency and urgency of micturition, dysuria and nocturnal enuresis being more common. However, pyelonephritis often occurs as a smouldering chronic infection, characterized by an absence of acute exacerbations or even of symptoms, so that the diagnosis may well be overlooked.

Whether simple "cystitis" or "pyelitis" occurs without some degree of interstitial renal inflammation is dubious, and it is therefore wise to assume that all patients suffering from renal tract infection of any nature have actual kidney involvement, since there is no reliable method, short of renal biopsy, for differentiating infection of the lower from infection of the upper part of the urinary tract.

Regardless of the route of infection, whether it is by the direct "ascending" pathway, through the blood-stream or along the lymphatic channels (Beeson, 1955), chronic or recurrent pyelonephritis is often bound in causal relationship to anatomical abnormalities of the urinary tract. However, a reasonably large number of patients suffering from chronic pyelonephritis have no demonstrable developmental abnormality.

On this basis we may group cases of pyelonephritis into three types: (i) simple acute pyelonephritis; (ii) chronic or recurrent pyelonephritis without demonstrable anatomical abnormality; and (iii) chronic or recurrent pyelonephritis with developmental abnormalities of the urinary tract. The acute uncomplicated urinary tract infection of short duration, due to a single strain of organism which is vulnerable to antimicrobial drugs, can be cured in 90% of cases. When we come to chronic urinary tract infections with or without developmental abnormalities there is an eventual cure rate of only 10%. The important factors involved here are reinfection with a different organism, the appearance of drug-resistant bacteria, and structural abnormalities that cannot be corrected surgically. Not all of these anomalies are gross and macroscopic. Recent reports (Porter and Giles, 1956; Jackson and Grieble, 1957) have described the presence of microscopic abnormalities of the kidneys in some cases of infection of the urinary tract. Thus congenital immaturity and dysplasia of the nephrons have, it is suggested, predisposed certain patients to the development of pyelonephritis.

Diagnostic Criteria.

In a study of urinary tract infections at the Institute of Child Health we have been aware of the importance of examination of the external genitalia, of observation of the urinary stream and of the diagnostic use of the double micturition test as part of the routine general examination of the patient. However, I desire to make special reference to the criteria that have been adopted for the diagnosis of urinary tract infections by means of examination of the urine. These criteria are three: first, the existence of pyuria (five or more leucocytes in each high power field

[1] Read at the annual meeting of the Australian Paediatric Association, Canberra, April 19 to 21, 1958.

in a centrifuged specimen of five millilitres of urine); secondly, the presence of Gram-stained organisms in a smear made from the uncentrifuged urine; and thirdly, the culture of organisms from the urine.

In our experience bacilluria, as evidenced by positive smear and culture findings, is of far more importance than pyuria. In this finding we are merely confirming what has been known for a long time. A scientific evaluation of pyuria and bacilluria has been made recently by Kass (1956 and 1957) in the Boston City Hospital, and some of his conclusions will be briefly stated, as they bring into relief the scientific basis upon which the relative significance of these diagnostic criteria rests.

TABLE I.

Gram Stain and Bacterial Counts in Control Urines.
(*After* Kass, E. H., *Tr. A. Am. Physicians*, 1956, 64: 56.)

Count.	Total Number of Examinations.	"Positive" Gram Stains.	
		Number.	Percentage.
0	200	1	0·5
0 to 100	83	4	5·0
100 to 10,000	25	5	20·0
100,000 and over	32	25	80·0

A difficulty often exists in distinguishing bacterial contamination of the urine during the procedure of collection of the specimen from actual multiplication of bacteria within the urinary tract in the presence of infection. Urine being in general an excellent culture medium, if small numbers of bacteria are discharged from a renal lesion, large numbers will be found in the bladder urine, if enough time has been allowed for multiplication of bacteria to take place. Contamination may be distinguished from true bacilluria by estimating the number of bacteria in the urine by a method of quantitative bacterial counts. Kass has shown that the urine of patients suffering from acute pyelonephritis has almost invariably been found to contain more than 100,000 bacteria per millilitre. On the other hand bacterial counts between zero and 10,000 presumably represent the range of contamination.

Gram-Stained Smear of Urine.

In the field of clinical practice the findings on examination of the Gram-stained smear of uncentrifuged urine have been shown to bear a relationship to these bacterial counts. For practical purposes the Gram staining of the freshly collected uncentrifuged urine which has been in the bladder for four hours or more will distinguish contamination from true infection, since there is usually no difficulty in finding organisms in stained specimens of urine when about 100,000 bacteria or more per millilitre of urine are present (Table I). When a lesser number of organisms are present, presumably owing to contamination, they are either not easily seen or not seen at all in the smear.

TABLE II.

Incidence of Pyuria (More than Five Leucocytes per High Power Field in Asymptomatic Female Patients).
(*After* Kass, E. H., *Tr. A. Am. Physicians*, 1956, 64: 56.)

Number of Bacteria.	Number of Patients.	Number with Pyuria.	Percentage with Pyuria.
0	120	4	3
10^{0-1}	60	0	0
10^{1-2}	38	0	0
10^{2-3}	14	1	7
10^{3-4}	7	0	0
10^{4-5}	5	0	0
10^{5-6}	5	2	40
$>10^{6}$	12	4	33
Total	261	11	—

For this reason it has been our custom to collect for examination urine which has been allowed to remain in the bladder for four or five hours prior to collection, or better still, the first morning specimen of urine which, having lain in the bladder overnight, has allowed the longest time for incubation. This method of collection is possible in almost all patients except infants and the youngest children. Under certain conditions, for example if a bacteriostatic drug is present in the urine, the number of bacteria may fall below the level usually found in the urine when infection is present. Obviously, the urine should

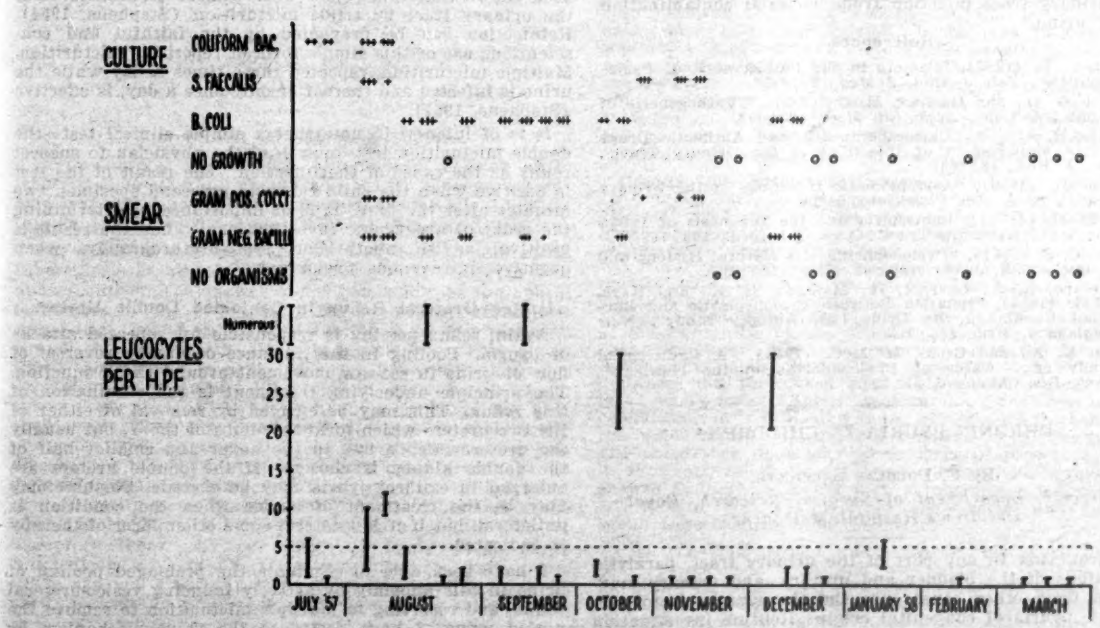

FIGURE I.

Results of microscopic and bacteriological examinations of urine from a girl aged 10 years.

be examined as soon as possible or at least within one hour of collection of the specimen, or if this is not possible it should be refrigerated at once in order to prevent the occurrence of bacterial multiplication.

Culture of Urine.

The degree of bacterial growth on culture of the urine is also important. If the urine has been collected under sterile conditions and plated while still fresh, a moderate or heavy growth of organisms will appear in most cases of true urinary tract infections, whereas a sparse growth will indicate the likelihood of the contamination that can readily occur.

Pyuria.

Last for consideration comes the significance of the presence of pus cells in the urine. This is by far the least important criterion in diagnosis. Bacteria may be present in large numbers in the urine without giving rise to pyuria. Pyuria has been found to be present in only one-third to one-half of symptomless patients with true bacilluria (Table II). Although there is no definite proof that bacilluria in symptomless patients is always related to the presence of pyelonephritis, clinical experience suggests that such a relationship often exists (MacDonald *et alii*, 1957). Evidently pyuria is of diagnostic value only when it is present. Its absence does not indicate necessarily the absence of urinary tract infection.

Exemplifying the above-mentioned principles is the case of a girl aged 10 years who suffered from chronic pyelonephritis (Figure I). Whereas, over a prolonged period of observation and treatment, organisms were found almost consistently in the urine on culture, pyuria proved to be only an intermittent feature. On those occasions on which smears of the uncentrifuged urine were examined, organisms were always seen on the smear, while a positive result on culture of the urine was also obtained.

Summary.

1. Pyelonephritis can exist in the absence of appreciable pyuria.

2. Bacilluria in many cases of pyelonephritis is a more reliable diagnostic criterion than pyuria.

3. The finding of organisms on a Gram-stained smear of the uncentrifuged urine, which has been collected and examined under proper conditions, often helps to distinguish true urinary tract infection from bacterial contamination of the urine.

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CHRONIC PYURIA IN CHILDREN.[1]

By F. DOUGLAS STEPHENS,

Director, Department of Surgical Research, Royal Children's Hospital, Melbourne.

OBSTRUCTION in any part of the urinary tract, paralytic conditions of the bladder and urethra, and urinary stagnation from other causes are the three main factors in chronic pyuria of congenital origin. Routine investigation will disclose the causes of nearly all types of obstruction or paralysis. The term "stagnation from other causes" includes perhaps the most frequent but least understood conditions, yet at the same time the most simply treated. They occur in the upper part of the tract in three conditions, namely congenital incompetence of the uretero-vesical junction, conjoined double ureters and obstructive megaureters. Reasons for stagnation in these three conditions, radiographic investigations and a regime of management are described.

Reflux, vesico-ureteral, uretero-ureteral or auto-ureteral, is the cause of the stagnation of urine common to these conditions. Figure I demonstrates these abnormalities and indicates the reversal of flow of urine in each type. Retrograde flow of urine into the ureters (Figure IA) can be

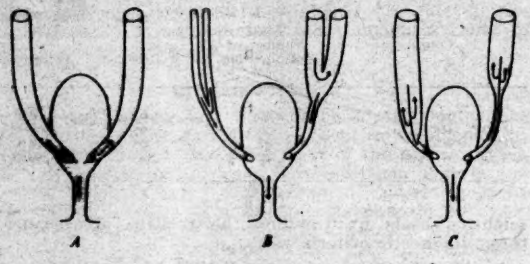

FIGURE I.

Diagram to show the direction of flow of urine in (A) vesico-ureteral reflux, (B) uretero-ureteral reflux and (C) auto-ureteral reflux.

demonstrated by micturition cystourethrography. Uretero-ureteral reflux as shown in Figure IB and the auto-ureteral reflux as in Figure IC are apparent on retrograde pyelography, which may require fluoroscopy or repeated radiographs.

Uretero-Vesical Incompetence.

Uretero-vesical incompetence is a common cause of chronic pyuria in girls, and to a lesser extent in boys. The pooling of urine occurring as a result of the incompetent lock mechanisms of the ureters leads to infection. It has been shown that this pooled urine can be eliminated from the urinary tract by triple micturition (Stephens, 1954). Reinfection can be prevented by the faithful and conscientious use of this simple form of repetitive micturition. Multiple micturition, repeated three times a day while the urine is infected and thereafter only once a day, is effective (Stephens, 1957).

It is of interest to note that a simple clinical test—the double micturition test—may lead the physician to suspect reflux as the cause of the infection. The result of the test is positive when the child can void a second specimen two minutes after the first. It is of importance in determining the order of urographic investigations: when the result is positive, advise micturition cysto-urethrography, when negative, intravenous pyelography.

Uretero-Ureteral Reflux in Conjoined Double Ureters.

Again, reflux pooling is responsible for repeated attacks of pyuria. Pooling in this instance occurs by reversal of flow of urine in see-saw movement around the Y junction. The principle underlying treatment is the elimination of this reflux. This may be effected by removal of either of the two ureters which form the limbs of the Y, but usually the ureter which arises in the upper and smaller half of the double kidney is chosen. If the double ureters are enlarged in calibre, pyuria may be chronic. Nephrectomy may be the treatment of choice when the condition is unilateral, but if it is bilateral some other form of therapy is indicated.

I have been able to eliminate the prolonged pooling of urine in this anomaly by actively inducing vesico-ureteral reflux, and resorting to multiple micturition to remove the pooled urine. I have destroyed the valve mechanism by suprapubic uretero-vesical meatotomy. In this way ureteric peristalsis is partially brought under conscious control,

[1] Read at the annual meeting of the Australian Paediatric Association, Canberra, April 19 to 21, 1958.

and repetitive micturition can be made to eliminate all pooled residual urine from the upper part of the urinary tract.

Auto-Ureteral Reflux of Obstructive Megaureter.

Here the auto-ureteral reflux is caused by an obstructive mechanism in the terminal part of the ureter, the nature of which is ill understood, as in the ureter on the left of Figure Ic; or the auto-ureteral reflux may be caused by a simple calibre difference as shown in the opposite ureter of Figure Ic.

For the megaureters in which the obstruction is close to the ureteric orifice, radical uretero-vesical meatotomy will overcome the block and at the same time induce reflux. Here multiple micturition, sometimes repeated five times or more, is necessary to remove the pooled urine.

When the calibre change is higher in the ureter, the uretero-vesical meatotomy may serve the purpose of controlled evacuation of the pooled urine of the upper part of the tract by repetitive micturition. But if there is an organic obstruction at the point of dilatation, then additional surgery is required to overcome this physical constriction.

Summary.

Stasis is the basis of infection in the urinary tract. Stasis in the upper part of the tract is caused by three forms of reflux—vesico-ureteral, uretero-ureteral, and auto-ureteral.

Multiple micturition alone or in combination with uretero-vesical meatotomy or surgical correction of a constriction can be used to eliminate the pooled urine and the infections caused by these forms of reflux.

Multiple micturition can also be used as a clinical test —the double micturition test—for vesico-ureteral reflux.

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PRIMARY TUBERCULOSIS: IS CHEMOTHERAPY NECESSARY?[1]

By DOUGLAS GALBRAITH,
Melbourne.

Tuberculosis: A Changing Pattern.

SINCE there is in Australia difference of opinion as to whether chemotherapy should be used in "uncomplicated" primary tuberculosis it has seemed worthwhile to bring this subject forward for discussion at this conference.

The question may be asked why we need to talk about tuberculosis at all, since in Australia it is really so well under control. The answer might reasonably be the appeal to doctors by the president of the Victorian Tuberculosis Association promulgated in March, 1958, by the Victorian Branch of the British Medical Association. This states that "tuberculosis is still the most important infectious disease in Australia and 700 people in Australia died from tuberculosis in 1956". The president goes on to say that there still remains a "hard core of those in middle life and later who, although they do not present such active disease, are the focus from which new cases arise". To us as pædiatricians the importance of this fact is that most of their victims are infants and children. Tuberculosis has been changed from a killing disease to a chronic disease. Therefore there may be almost as many people with tuberculosis alive in Australia today as there were a few years ago and their threat to child life is still great. A positive result to a tuberculin test in a young child is now frequently the Klaxon horn which sounds the alarm that a tuberculous adult is near this child.

[1] Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

Statistics in Victoria.

To sharpen the argument about the continuing incidence of tuberculosis in Victoria, the following statistics are quoted through the courtesy of the Director of Tuberculosis in Victoria and of the Medical Director of the Royal Children's Hospital. The number of fresh adult cases, in patients aged 15 years and over, notified in Victoria in 1957 was 738; the number of children notified with primary tuberculosis in 1957 was 75; the number of children dead from tuberculosis in 1956 was six. So far as the Royal Children's Hospital is concerned, an average of 36 children each year have been admitted with tuberculosis over the past five years, and there have been 14 deaths from this disease during the same period.

How Necessary is Chemotherapy in Primary Tuberculosis?

I must say at once that a few years ago I thought there was merit in withholding chemotherapy in children over one year of age, even if there were positive findings in the chest film, provided the child was making good clinical progress. That I have changed my mind is partly due to the influence of colleagues in the Department of Tuberculosis, partly to the more recent medical literature, but mainly to the chastening personal experience of admitting to the Royal Children's Hospital Orthopædic Section with hæmatogenous lesions three young children who had been known to have primary tuberculosis, but because of their good clinical condition were not given chemotherapy. One of these children has a skeletal lesion and two have renal lesions. (Two other children have been admitted with skeletal tuberculosis who were also known to have primary tuberculosis and were given what by today's standards would be regarded as inadequate chemotherapy.) The following are the clinical details of the three children who received no chemotherapy.

Reports of Cases.

CASE I.—The patient was a male child, born in December, 1951. In September, 1952, he presented at the Royal Children's Hospital at the age of nine months, having been referred from the Tuberculosis Bureau because of his father's active pulmonary tuberculosis. A skiagram of the chest showed segmental collapse at the left apex and enlargement of the hilar glands. In January, 1953, progress was noted as satisfactory, although the evening temperature was occasionally 100° F., and a skiagram of the chest showed a faint shadow in the lingula region. In May he was quite well and gaining weight. In June he was "favouring" the right side when walking. An X-ray film showed complete collapse of the eleventh thoracic vertebra and partial collapse of the tenth, with cold abscess formation.

CASE II.—The patient was a male child, born in May, 1945. In October, 1946, he was admitted to the Royal Children's Hospital, aged one year and five months, with pertussis and bronchopneumonia. There is no note of a Mantoux test having been performed. In April, 1953, he was readmitted to the Royal Children's Hospital, aged seven years and eleven months, with right lobar pneumonia. The Mantoux response was now positive. A skiagram of the chest showed a calcified primary lesion in the right pectoral segment with enlargement of the right hilar glands. Culture of gastric contents gave negative results. In August he was seen in the out-patient department and was very well. In November, 1956, he had been quite well until three weeks previously, when his mother noted blood on his underclothing. A skiagram of the chest showed calcification in both hilar regions, with pleural thickening in the region of the right upper and middle lobes. The radiologist noted that there was no evidence of present activity. A skiagram of the renal tract (intravenous pyelogram) showed findings consistent with a tuberculous lesion in the left kidney, possibly involving the ureter, and tubercle bacilli were isolated from the urine.

CASE III.—The patient was a female child, born in May, 1946. In October, 1953, she was admitted to the Royal Children's Hospital, aged seven years and five months, with primary tuberculosis and erythema nodosum. A skiagram of the chest showed a "slight increase in feathery markings". Culture of fasting gastric contents gave negative results. Her contact was her father, who suffered from pulmonary

tuberculosis. In June, 1954, satisfactory progress was noted, and an X-ray examination of the chest showed the lung fields clear. In March, 1956, progress was noted as satisfactory. In August, 1957, she had continued to be well until four weeks previously, when she began to get up at night to void urine. Some diurnal urgency was present, but no frequency. A skiagram of the chest showed "spotty" calcification in the right upper lobe and in paratracheal and hilar glands. An X-ray examination of the renal tract (intravenous pyelogram) showed gross clubbing of calyces of the right renal pelvis and large hydronephrosis. The urine was found to contain tubercle bacilli.

These numbers are small, yet to the parents each instance is a personal tragedy, and their natural thought might well be to ask if these complications could have been prevented. Certain evidence must be assessed if we are to give a completely honest answer to such a question; which is, in effect, our essential one as to whether we should use chemotherapy in all cases of primary tuberculosis—and here I am deliberately widening the field to include all young children known to have been recently infected with tuberculosis, even without symptoms. This evidence can perhaps best be set out by trying to answer four questions: (i) What are the risks of death or of hæmatogenous spread in primary tuberculosis? (ii) What are the risks of ensuing chronic pulmonary disease? (iii) Does chemotherapy lessen these risks? (iv) What are the disadvantages of chemotherapy?

What are the Risks of Death or of Hæmatogenous Spread?

Considerable evidence is available from the pre-chemotherapy era. Nissen-Myers (1949) in Scandinavia studied 889 individuals and found extrathoracic lesions to occur in 5% to 10% of children infected under two years of age and in about 2% of older children. Holmdahl (1950) followed for a twenty-year period 657 children with primary tuberculosis and erythema nodosum and found the total risk of death to be 5·6%. Lincoln (1951) followed up 622 children seen at the Bellevue Hospital, New York, and found that 134 died within one year of diagnosis. This probably included a proportion of susceptible Negro children. Cammoch and Miller (1953), in a survey of 1020 children under five years of age in Newcastle, England, found the risk of death to be 3·5%; of developing meningitis or miliary tuberculosis to be 4·1%; and of developing skeletal tuberculosis to be 1·5%.

In Australia, Reginald Webster (1947), to whom we owe so much of our knowledge of the pathology of childhood tuberculosis, has emphasized the early blood-stream dissemination of tubercle bacilli from the primary focus. He quotes the findings of Penington (1938) and of Willis and Rosenthal (1945), who at autopsy found a high proportion of blood-borne dissemination in patients who died of tuberculosis—Penington in 68% and Willis and Rosenthal in approximately 90%. In such autopsy material it might be said that the dissemination was terminal, but much of it has been considered on the pathological evidence to have occurred long before this. I would argue that this hæmatogenous spread commences within a few weeks or even days of the primary infection, and would quote such authorities as Krause (1924) and Rich (1951).

What are the Risks of Ensuing Pulmonary Tuberculosis?

There is strong support for the view that much of the chronic pulmonary tuberculosis of later life arises from the still-warm ashes of primary tuberculosis. Lincoln (1951), in her follow-up investigation of children with primary tuberculosis, found that 8% developed chronic pulmonary tuberculosis at intervals of one to 10 years after their first infection, the incidence being highest in adolescent girls.

Webster (1947) has stated that "incontrovertible proof of the occurrence of primary tuberculous pulmonary infection in adults is best obtained by the study of morbid anatomy" and he quotes Pagel (1944) who has insisted, from the post-mortem study of the "adult" type of pulmonary tuberculosis, that the primary complex is to be found in almost every case, and that this statement applies particularly to recent infection in young adults. Webster (1950) emphasized the danger in assuming that apparently burned-out tuberculous lesions, especially in the tracheobronchial lymph nodes, are devoid of viable tubercle bacilli. And, finally, Debré (1956) states that "from the work of Medlar (1947) and Terplan (1951) it may safely be inferred that 86% to 97% of chronic tuberculosis occurring under 30 years of age resulted from the evolution of primary tuberculosis".

Does Chemotherapy Lessen these Risks?

This is the "64 dollar question". I think that many of us were previously influenced against using chemotherapy because of the apparent inefficiency of streptomycin in preventing complications. The advent of other drugs, and particularly of isoniazid, has changed the picture. For example, Bentley, Grzybowski and Benjamin (1954), from their wide experience at High Wood Hospital of tuberculosis in childhood and adolescence, state categorically: "We cannot recall a single case of primary tuberculosis treated with antibiotics developing a hæmatogenous complication." However, it should be said that Bentley (1955) suggested that drug treatment may be detrimental to complete recovery in uncomplicated hilar adenitis in younger children by leading to an increased frequency of segmental lesions, a view not supported by Ryder (1957). Wallgren (1956) in general favours treatment to prevent complications.

In November, 1955, a symposium on tuberculosis in infancy and childhood was held at the National Jewish Hospital at Denver, U.S.A., and was attended by many of the world's outstanding authorities on this subject. The proceedings are published in full in *The American Review of Tuberculosis* of August, 1956, and this well repays study. Here Robert Debré reported the observations on 3000 children with childhood tuberculosis, some of whom were treated and some used as controls. As a result of this study he says: "The treatment of the recently infected child is mandatory if we want to prevent acute generalised tuberculosis and secondary bone and other lesions, and the early and late pulmonary manifestations in adolescence and adult life." Furthermore, he advocates immediate treatment for those symptom-free children who have shown a recent appearance of a positive skin reaction to tuberculin.

Katherine Hsu (1956 and 1957) feels so strongly about the need for chemotherapy in primary tuberculosis that she gives to one of her articles the accusatory title: "Should Primary Tuberculosis in Children Continue to be Neglected?" However, the most decisive information on this subject is likely to come from two large-scale investigations at present in progress, one in France under the auspices of the French National Institution of Hygiene, and the other in America, organized by the United States Public Health Service. From both these authorities preliminary information is available. Two of the French investigators, Dr. Raynaud and Dr. Naveau (1956), have observed that when primary tuberculosis is accompanied by opacities in the lungs, either single or multiple, they constantly and rapidly disappear under drug treatment. On the contrary, without treatment they persist for a long time. Atelectatic opacities and very enlarged lymph nodes and lymph node-bronchial fistulæ were not markedly modified. A combination of isoniazid and PAS was used.

The more recent preliminary report on the United States Public Health Service Tuberculosis Prophylaxis Trial (December, 1957) is more definite. In this cooperative investigation by 32 clinical investigators, which began in January, 1955, 2750 children with asymptomatic primary tuberculosis are under observation. This is a strict "control study", in which half the children have been given a daily dose of four to five milligrammes of isoniazid per kilogram of body weight, and the other half an identical placebo. The conditions of control have been very strict. By June, 1957, a total of 1394 children in the isoniazid group and 1356 children in the placebo group have been observed for one to thirty months. During

this time serious intrapulmonary complications developed in five children who received isoniazid and in 26 children who received the placebo. Adverse pulmonary changes, less serious in nature, occurred among 21 infected children who received isoniazid and 34 infected children who received placebos.

An important summary of work relating to the antibacterial treatment of primary tuberculosis is contained in the "Occasional Survey" of *The Lancet* dated August 10, 1957. The summing-up favours such treatment, certainly in younger children and in those with signs of primary infection.

What are the Disadvantages of Chemotherapy?

Among these could be included: (*a*) the interference with natural immunity; (*b*) the necessity for regular hospital attendance; (*c*) the development of chemotherapy-resistant bacilli; (*d*) the need to hold chemotherapy in reserve; (*e*) the development of side effects; (*f*) the cost of chemotherapy.

Time does not permit me to deal with these in detail; but in regard to natural immunity, while it is true that chemo-prophylaxis is not immunity, it is equally true that since we know so little about the development of immunity we would certainly be unwise to accept this argument. On the other hand, the development of chemotherapy-resistant bacilli could be a sound reason for withholding chemotherapy, and when streptomycin was used this argument was probably valid. It is true, too, that Dubos (1956) observed isoniazid-resistant bacilli in three out of 88 children treated. However, there is evidence that the development of isoniazid resistance is often associated with diminished pathogenicity on the part of the tubercle bacilli (Oestreicher, 1955). The main test must still be the clinical one, and by using isoniazid we can keep streptomycin in reserve. A careful watch must be maintained for side effects. Personally, I have seen no instance of the side effects of isoniazid therapy except for the development of a rash in one child. In regard to cost, it is estimated that in America a child can be treated for one year with isoniazid for one dollar. In Australia the present comparative cost is approximately forty-five shillings.

Summary and Conclusion.

1. Childhood tuberculosis cannot yet in Victoria be regarded as a negligible disease, and children still die from this infection.

2. With the changing pattern of tuberculous infection from a killing to a chronic disease, the child is still "at risk", and the discovery of infection in the young child by tuberculin testing in a community survey is of great value in alerting the search for the infecting adult, often until then unrecognized. The responsibility of the pædiatrician is thus increased.

3. Case histories of three children are given who were known to be infected with tuberculosis and were not given chemotherapy because of their good clinical condition. One later developed skeletal tuberculosis and two developed renal tuberculosis. It is emphasized that up to within a few weeks of the diagnosis of florid skeletal or renal tuberculosis these children were regarded as being quite well.

4. Evidence is given from various authorities of the risks of death or of hæmatogenous spread from primary tuberculosis. Opinion is also submitted in regard to ensuing chronic pulmonary (adult type) tuberculosis.

5. A survey of available evidence strongly supports the view that chemotherapy lessens these risks, and that any theoretical disadvantages are greatly outweighed by the benefit.

6. Primary tuberculosis should be treated not on the presence or absence of symptoms, but on our knowledge of its pathology and natural history. Children who seem perfectly well in every way may yet rapidly show evidence of serious complications.

7. Treatment should be given at once, since it is in the early stages of the disease that tubercle bacilli multiply rapidly and disseminate.

8. Isoniazid is the drug of choice, probably with PAS. It must be given in full dosage and continuously for not less than one year.

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ACUTE SUBDURAL HÆMATOMA IN THE NEWBORN.[1,2]

By M. SOFER SCHREIBER,

Royal Alexandra Hospital for Children, Sydney.

STANDARD pædiatric text-books say little about the diagnosis or surgical treatment of acute subdural hæmatoma in the newborn, and imply a poor prognosis. In fact, it is the commonest variety of traumatic cerebral hæmorrhage

[1] Read at the annual meeting of the Australian Pædiatric Association, Canberra, April 19 to 21, 1958.

[2] This condition is fully described in "Some Observations on Certain Head Injuries of Infants and Children", *MED. J. AUST.*, 1957, 2: 930, and a précis only is now presented.

for which operation is performed at the Children's Hospital, and the results of treatment are surprisingly good.

In 17 consecutive such cases of massive acute subdural hæmatoma seen at the Children's Hospital, 16 were unilateral. This contrasts with the findings in subdural hæmatoma in infancy, in which more than four-fifths of the cases are bilateral. It seems, therefore, that these chronic hæmatomata of infants are not merely missed or mild cases of the acute subdural hæmatoma of the newborn, as is usually inferred. It is likely that the profuse bleeding, which causes the acute subdural hæmatoma of the newborn, is from ruptured inferior cerebral bridging veins on one side of the cerebral hemisphere, whereas in the more chronic bilateral subdural hæmatomata of infancy

FIGURE I.

Photograph of a baby who went into convulsions on the third day of life; his fontanelle bulged, he was comatose and had a complete left third nerve lesion (ptosis and a fixed dilated pupil).

FIGURE II.

After decompressive subdural taps, craniotomy was performed on the fifth day of life, and an extensive subdural clot was removed.

the original bleeding is a much less profuse slow symptomless oozing from the centrally situated superior sagittal venous sinus.

The initial symptoms are usually quite acute, with onset most commonly on the third or second day of life—irritability and convulsions, going on to coma and collapse. The baby is pale, has a tense fontanelle, and an oculomotor nerve paresis on the side of the lesion (varying from a dilated sluggish pupil to a complete third nerve palsy).

The diagnosis is confirmed by subdural taps. The diagnostic needle is inserted in several sites along the length of the coronal suture, removing as much fluid blood as possible. If the blood is too thick to flow, immediate burr holes are performed. With this relief of pressure,

FIGURE III.

The baby aged 11 months. He walks well, uses all limbs normally and has a normal electroencephalogram.

the baby's condition rapidly improves, and a final craniotomy to remove the thick residual clot is performed within the next few days. Figures I, II, and III illustrate a typical case. Roughly half the survivors are developing well, and appear to have good future prospects.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"The Year Book of Cancer (1957-1958 Year Book Series)", compiled and edited by Randolph Lee Clark, jr., B.S., M.D., M.Sc., D.Sc., and Russell W. Cumley, B.A., M.A., Ph.D.; 1958. Chicago: The Year Book Publishers. Melbourne: W. Ramsay (Surgical), Limited. 7½" x 5", pp. 528, with 191 illustrations. Price: £4 8s.

One of the Practical Medicine Series of Year Books.

"Emergency Surgery", by Hamilton Bailey, F.R.C.S. (England), F.A.C.S., F.R.S.E.; Seventh Edition; 1958. Bristol: John Wright and Sons, Limited. 9¾" x 6¼", pp. 1216, with 1576 illustrations. Price: £9 9s. (English).

A fully revised edition of a well-known work.

"Diseases of Children in the Subtropics and Tropics", by H. C. Trowell, O.B.E., M.D., F.R.C.P., and D. B. Jelliffe, M.D., M.R.C.P., D.C.H., D.T.M. & H.; 1958. 9" x 5¾", pp. 936, with many illustrations. Price: 105s. (English).

Prepared by a panel of some seventy members from all over the world.

The Medical Journal of Australia

SATURDAY, JANUARY 31, 1959.

THE REPORT ON MEDICAL EDUCATION OF THE N.S.W. BRANCH.

Just under twelve months ago a committee was set up by the N.S.W. Branch of the British Medical Association with the following terms of reference:

> To discuss medical education with special reference to the Murray Report, the Committee to make its report urgently to the Council of the New South Wales Branch of the British Medical Association, the Council of the Association to take such action as it deems necessary.

An effort was made to have the committee as widely representative of the medical profession and of the universities as possible, and this was in large measure achieved, with the notable exception that the two universities, not unreasonably, did not accept the invitation to appoint representatives to the committee. Professor C. G. Lambie, Emeritus Professor of Medicine, University of Sydney, was coopted to the committee and subsequently appointed Coordinator. On the basis of the committee's findings, an interim report[1] was issued by the Council of the N.S.W. Branch in September, 1958, with a series of recommendations. This was necessarily a brief report, lacking detailed facts and figures to justify the recommendations made, and it was made clear at the time that these details would be published later in a full report. This did not deter certain members of the State legislature from giving the interim report a rough handling, and from making various uninformed comments which would have been offensive if they had not been ludicrous. One quotation from a speech by the Minister for Labour and Industry in the debate in the Legislative Council on September 24, 1958, should suffice:

> I feel sure that hon. members will agree that this report is one of the greatest fakes ever imposed upon the community by persons who hold themselves out as members of an honourable profession. The report contains statements that are untrue, misleading, conflicting and ridiculous. Its recommendations also are contradictory and impracticable.

The full report has now been printed and distributed widely, and those who read it may assess for themselves the value of the Minister's remarks. It is in fact an important contribution not only to the understanding and solution of the present problem in N.S.W., but also to the discussion of medical and tertiary education in general. It brings together a great deal of factual information with valuable opinions expressed by authorities from various parts of the world, relating them to the immediate situation in N.S.W. For this important and painstaking work of compilation, as well as for much of the constructive and imaginative comment contained in the report, the credit must, we understand, be given to Professor Lambie. We are all in his debt.

The final report is, however, that of the Council of the N.S.W. Branch of the B.M.A. issued on behalf of the Branch. Covering, as it does, only the question of student numbers and the problem of the establishment of a second medical school, it is the first part of a full study on medical education which the Branch has undertaken. This needs to be stressed. The voice of the whole medical profession has a right to be heard and heeded in matters that deeply affect the future of medicine in Australia, and the B.M.A. in N.S.W. is wisely taking its time over this task in order that an informed and considered view may be put forward. We hope that the Government and other authorities responsible for the development of medical education in N.S.W. will heed the report and its recommendations. Of one thing, however, we may be confident: whether or not its immediate recommendations are accepted (and acceptance we must realistically admit would mean the reversal of firmly expressed and partly implemented government policy), the report has permanent value and must influence future developments.

The report is readily available to all who wish to see it, so there is no point in attempting to present a condensed version of it here, especially as much of the usefulness of the report is in its detail. Its recommendations are substantially those of the interim report, which we have already published. Three points only will be mentioned. First, the report shows commendable vision in the idea put forward of founding a new medical school as part of a new university college, affiliated with the University of Sydney and incorporating other humane faculties such as arts, science and law. Seen in the light of Sydney's rapid expansion and development, this makes good sense. Second, many factors are important in determining the site of a new medical school with or without a new university college, and much more thought needs to be given to them than has been apparent in official statements so far. The sites at Parramatta and in the Lane Cove Valley, suggested in the report, have much to commend them, and should still be considered for future development, irrespective of whether or not a medical school comes into being at Kensington. Sydney may well need a third medical school in the not too distant future. The important practical corollary is that decisions on these questions should be made soon, if adequate land is to be acquired or reserved in the most suitable areas. Third, the report urges that relief of the position at the University of Sydney should be the subject of a special inquiry, and that the views of all interested persons and bodies should be obtained. This is both democratic and sensible.

The question of a new medical school situated at Kensington as part of the University of New South Wales is considered in various parts of the report, and the points for and against it are examined carefully. One cannot help thinking that, paradoxically, the case put for it in the report is stronger than any case put by the N.S.W.

[1] M. J. AUSTRALIA, 1958, 2:368 (September 13).

Government, which favours the site so firmly that its own Advisory Committee was not even allowed to discuss it. However, the points made against it are so strong as to provide a complete vindication, if any was needed, of the sincerity of the N.S.W. Branch in opposing this site. The attitude was based on facts and reason, not on politics or personalities, and the plea to the Government to reconsider its attitude remains. One thing, however, we feel justified in saying. It is said without official authority but with confidence. If the Government persists in its intention to establish a medical school at the University of N.S.W., the members of the medical profession in this State, individually and collectively, can be expected to do everything in their power to ensure that it is a first-class medical school. Some will regret the establishment of the school, some will approve it, but any action or attitude that might prejudice the standard of the teaching or practice of medicine would be unthinkable. The concluding paragraph of the main body of the N.S.W. Branch's report was written with no tongue in cheek:

> To see the various problems dealt with in this report in proper perspective, it must be realized that medical education cannot be viewed in isolation, but only as one aspect of tertiary education and indeed of education in general. The subject is an extremely complex one, for it is a question not of finance only, but of a conflict of educational ideals. Our aim should be to protect the ideals of medical education from corruption and expediency.

Any government which shares and pursues this aim can expect the fullest cooperation of the medical profession, which has much to offer in this field.

Current Comment.

FAMILIAL MEDITERRANEAN FEVER.

FAMILIAL Mediterranean fever or, more fully, chronic recurrent heredofamilial Mediterranean fever, is the name proposed by H. Heller, E. Sohar and L. Sherf[1] for a disease which has been described and discussed, chiefly in the French medical literature, by a number of authors during the past decade, under various names such as "periodic disease" and "benign paroxysmal peritonitis", but which Heller and his colleagues claim has been confused, under these labels, with other unrelated conditions. The name proposed by them emphasizes some of the outstanding features of a somewhat peculiar condition—namely, its recurrent nature, the fact that it appears to have a genetic basis, and the fact that it is, so far as is known, virtually confined to certain Eastern Mediterranean races. It should be noted that recent descriptions of cases of periodic disease in English and American journals nearly all refer to a quite different and very much more benign condition.

As defined by Heller and his colleagues, the disease has the following clinical features: recurrent feverish attacks are usually accompanied by episodes of acute abdominal pain, which may be of all grades of severity, but are most often extreme; sometimes, however, the pain is in the chest, or sometimes one or more joints may be involved, and occasionally a feverish episode is the only manifestation; there may also be cutaneous manifestations of the condition. Individual attacks last from 12 to 24 hours in the acute abdominal crisis, or rather longer in the arthritic episodes. Attacks occur at no regular intervals; a series of episodes at frequent intervals may be followed by a remission for months or years, but Heller and his colleagues know of no instance in which recovery has been complete or permanent. The type of attack is not constant for any particular individual, and almost all patients suffer an acute abdominal crisis at one time or another. It is therefore not surprising that many patients are subjected to laparotomy at some stage in the course of their illness, but no definite pathological condition is found. In about 70% of patients the onset of the disease occurs before the age of 10 years, and in a further 25% before 20 years.

Pathological investigations reveal few abnormalities. The erythrocyte sedimentation rate is usually raised, both during attacks and in the intervals between them. White cell counts are usually within normal limits. Heller and his colleagues consistently failed to find any evidence of pathogenic organisms in their series of patients. Virus studies and agglutination tests always gave negative results, as did 25 examinations for L.E. cells. However, albumin was present in the urine of over half the patients, and albuminuria was in some cases heavy. Three of the patients died of renal complications, and it is suggested that this may be the usual eventual outcome of the disease. In the few cases in which an autopsy has been performed, the chief finding was amyloidosis of the kidneys and other internal organs. For treatment a wide variety of drugs have been tried, but all without effect on the course of the disease. Heller and his colleagues have been able to collect 74 patients with the disease, and they have identified 179 more cases described by other authors under various names. They know of no case in which a permanent remission has occurred, and the age distribution of their patients makes them suspect that in most cases death occurs before middle age is passed.

Heller and his colleagues observed a well-marked familial incidence of the disease, and they give some pedigrees which illustrate this tendency very clearly. The racial distribution of the sufferers from this condition is remarkable, practically all of them being either Jews or Armenians, with a minority of Lebanese Arabs. In this context, Heller and his colleagues point out that Jews are not a uniform ethnic group, and that racially they may be divided into Ashkenazi Jews (from eastern and central Europe) and the non-Ashkenazi Jews (including the Sephardi Jews and some other groups). They state that thalassæmia and favism do not occur in Ashkenazi Jews, although they are well known in the other groups. Familial Mediterranean fever has a similar distribution, not one of the patients in the series being an Ashkenazi Jew, though more than half the Jewish population of Israel, where Heller and his colleagues were working, is Ashkenazi. This disease, then, joins that small group of peculiar diseases in which restriction to special racial groups is added to an obscure or unknown ætiology. So far virtually all cases reported have been from Middle Eastern or Mediterranean countries; but as the condition is a familial one, and if, of course, it is a valid entity, sooner or later it is likely to be found in other countries among migrants from this area or their descendants.

[1] A.M.A. Arch. intern. Med., 1958, 102: 50 (July).

A NEW GROUP OF DRUGS OF INTEREST TO THE CARDIOLOGIST.

GREAT clinical interest has recently been shown in a new group of drugs, the inhibitors of monoamine oxidase, the enzyme involved in the breakdown of serotonin, adrenaline, nor-adrenaline and possibly other amines. The best known drug in this series, iproniazid ("Marsilid"), has been used in psychiatric and geriatric practice and has been widely praised as a "psychic energizer".

At the third World Congress of Cardiology held in Brussels in September, 1958, P. Cesarman of Mexico City reported on the use of iproniazid in the treatment of angina pectoris. Over 200 patients had been treated, on the average with a dose of 50 mg. three times a day. Cesarman concluded that the drug abolished anginal pain and increased effort reserve, a favourable response being

noticeable within 10 days. Side effects suggestive of sympathetic and parasympathetic blockade were frequently noted; common symptoms were dryness of the mouth, constipation, flatulence, difficulty in micturition, impotence, insomnia, euphoria and muscle tremor. Cesarman also commented on the hypotensive effect of iproniazid in a certain number of his patients.

A. M. Master[1] has recently reported on the use of iproniazid in angina pectoris. Master, well known for many years for his writings concerning coronary artery disease and especially on account of his "two steps" exercise test, treated 74 patients suffering from typical severe angina. There were 58 men and 16 women, chiefly between the ages of 50 and 70 years. Amongst the patients treated were six with "status anginosus" requiring from 20 to 60 trinitrin tablets daily. Master states: "The effect of iproniazid on the anginal syndrome is indeed remarkable. 41 in this series of 74 seriously sick patients obtained complete, or near complete, relief of chest pain. Of 6 patients in 'status anginosus' 5 became entirely free of pain. . . . I have never seen anything like it in my many years of practice and interest in coronary disease." Master's enthusiasm, however, was very much tempered by the observation of serious, frequent, toxic side effects. Only 17 of the 74 patients were able to continue using the drug; severe side reactions compelled its use to be discontinued in the remainder. Undesirable side effects, together with reports of hepatocellular necrosis, have since prompted complete cessation of iproniazid therapy in most cases. Speculating on the possible mechanism of this drug's remarkable action, Master believes that the relief of angina pectoris is due, at least in part, to cerebral stimulation with uplift of mood and increase in pain threshold. He has noted that the drug achieves its best results when used in apprehensive patients. Iproniazid is now available in this country. In view of its toxic side effects its use should be limited at present to patients who are under hospital supervision and for whom desperate measures are justified on account of the severity of their symptoms.

Another monoamine oxidase inhibitor, 1-phenyl-2-hydrazinopropane, was reported by L. Gillespie, L. L. Terry and A. Sjoerdsma[2] at the thirty-first scientific session of the American Heart Association held in San Francisco in October, 1958, as a promising anti-hypertensive drug. Gillespie and his co-workers administered the drug to a small group of hospitalized hypertensive subjects in single oral doses of 12·5 to 50·0 mg. daily. Significant lowering of blood pressure was noted in each case, the predominant effect being on the standing pressure. A large group of out-patients have since been maintained on 6·25 to 25·0 mg. of the drug per day for a period of two months. Satisfactory control was achieved in every case with use of this agent alone or in combination with chlorothiazide. In this small series no undesirable side effects were noted, and the authors concluded that results warranted further trial of this agent in the management of hypertension.

It seems almost too good to be true that one drug, or at least drugs belonging to one group of pharmacological agents, should be valuable in the treatment of the two commonest forms of cardio-vascular disease, namely, hypertension and ischæmic heart disease. Given a certain amount of healthy scepticism, we may await with eager anticipation reports of further trials with this group of compounds.

[1] *Amer. Heart J.*, 1958, 56:570 (October).
[2] *Circulation*, 1958 (October).

PSEUDOCYST OF THE PANCREAS.

PSEUDOCYST of the pancreas is a rare but important condition, which is of considerable surgical interest, both because it taxes the skill and ingenuity of the surgeon, and because its successful cure relieves the patient of a serious threat to his health and comfort. The condition was recently discussed in this Journal in an article by W. H. Nield[1] of Newcastle, who described a personal case. Two extensive reviews of the subject have also recently appeared in American journals. In one of these W. D. Warren, W. H. Marsh and W. R. Sandusky[2] discuss the operative procedures used in the treatment of the condition: the authors' opinion is based on original observations on the experimental production and internal decompression of pancreatic pseudocysts in dogs, on the collective experience of ten cases met with at the University of Virginia Hospital, and on 478 cases reported in medical literature since 1945. In the other, J. M. Waugh and T. E. Lynn[3] discuss 58 cases of pseudocyst of the pancreas encountered at the Mayo Clinic between 1948 and 1954. All authors accept the view that total extirpation of the cyst is the ideal procedure, but is seldom feasible. Most authorities seem to agree that drainage into the stomach or jejunum (as was done in Nield's case) gives the most satisfactory results. Warren and his colleagues state that external drainage, with or without marsupialization, is a simple procedure, but that, on account of the high proportion of cases in which a subsequent operation is necessary, and the attendant risks, its use should be limited to patients who cannot tolerate a more extensive operation. Surprisingly, the authors of the paper from the Mayo Clinic state that in the majority of cases external drainage is still the operation of choice, and that recurrence of the cyst can usually be prevented by drainage for an adequate period. Recurrence was reported in only two of the 40 patients so treated in their series, though the period of drainage varied from six weeks to two and a half years, with a mean of about six months. It is evident that internal drainage, with its rapid convalescence, is a highly satisfactory operation when successful, but it seems that this is a field in which the arguments for and against the various procedures will depend both on the exact conditions found at operation and on the training and experience of the surgeon concerned.

[1] MED. J. AUST., 1958, 2:731 (November 29).
[2] *Ann. Surg.*, 1958, 147:903 (June).
[3] *A.M.A. Arch. Surg.*, 1958, 77:47 (July).

FLUORESCENT LIGHTING.

THERE is a quite widespread belief that fluorescent lighting is in some way harmful or trying to the eyes, possibly because, when first introduced, fluorescent light tubes often tended to flicker in a manner which caused discomfort to some people. It is therefore interesting to note a brief report on this topic prepared by a committee of the Council on Industrial Health of the American Medical Association.[4] The report first mentions that both the ultra-violet and the infra-red components of the light have been suspected as being deleterious. However, it is pointed out that the ultra-violet light from a clear blue summer sky is several times more intense than that from fluorescent lighting. Light from fluorescent lamps resembles daylight more closely than other forms of artificial light, and this is considered a desirable quality. Infra-red energy from fluorescent light produces no known physiological effect other than that due to heat, and fluorescent light tubes produce less heat per candle power than tungsten-filament electric bulbs. Glare may arise from any system of illumination, and its elimination is simply a question of proper installation. Noticeable flicker is usually eliminated in modern multiple tube fluorescent installations, and even with single tubes is not usually troublesome if the tubes are functioning properly. It is pointed out that individual tasks need different levels of illumination to provide a satisfactory degree of visual efficiency and eye comfort, and that some individuals are light-sensitive and experience discomfort from light regardless of its source.

The committee concludes that fluorescent lighting is not harmful to the eyes, and does not cause visual discomfort if properly installed, maintained and used.

[4] *J. Amer. med. Ass.*, 1958, 168:47 (September 6).

Abstracts from Medical Literature.

OBSTETRICS AND GYNÆCOLOGY.

The Decline of Maternal Mortality.

M. D. KLEIN AND J. CLAHR (*J. Amer. med. Ass.*, September 20, 1958) note the marked reduction in maternal mortality during the past 12 years from 11·6 per 10,000 live births in the U.S.A. in 1946 to 5·0 per 10,000 in 1956. Detailed studies are made from data available from the Bronx County Medical Society showing directions in which greatest advances have been made and other aspects of obstetrical practice where advance is lagging and concentrated effort is indicated in the future. Infection accounted for only 10% of all maternal deaths, and showed the greatest reduction as a cause of maternal mortality over the past six years. Deaths after criminal abortion afford the chief reason for infection's remaining a leading cause of maternal death. The authors list the following factors which have contributed to reduced deaths from infection: the use of antibiotics both prophylactically and for established infection, blood transfusion, the judicious intravenous use of "Pitocin", and the extended use of lower segment Cæsarean section combined with antibiotics. In the field of anæsthesia there is a choice between local and general anæsthetics and spinal, epidural and caudal conduction anæsthetics. Each has its definite indications, and the type of anæsthesia used should be selected in each case to suit the individual patient. Deaths from anæsthesia accounted for 8% of all maternal deaths in Bronx County, a reduction of 65% in anæsthetic deaths during the past six years. The authors consider that advances in pharmacology and anæsthetic technique, and the utilization of modern equipment, recovery rooms and trained personnel have played a prominent role in the reduction of maternal deaths from anæsthesia. They state that the maternal mortality from toxæmia of pregnancy in the U.S.A. has been shown to have decreased from 12·7 deaths per 10,000 live births to 2·3. This decline is considered to be the result of new conceptions concerning the effects of arteriolar spasm in producing toxæmia and the metabolic disturbances of sodium retention and accumulation of tissue fluid. The use of a combination of anti-hypertensive drugs is favoured. The authors consider that further reduction in mortality rate due to toxæmia must await the discovery of its cause. Hæmorrhage was the most frequent cause of maternal death in the series investigated (19% of all deaths). During the period 1952 to 1957 deaths from this cause decreased by one-quarter in Bronx County. This reduction was primarily due to the more liberal use of available blood. Deaths from accidental hæmorrhage decreased by one-half, but placenta praevia offers an obstetrical challenge, since no decrease in maternal mortality from this cause is noted in the analysis. Traumatic rupture of the uterus was the leading cause of death from hæmorrhage during 1946 to 1951, but was not encountered during the second study period, from 1952 to 1957. An increase is noted in deaths due to ectopic hæmorrhage, while deaths due to blood coagulation deficiency were unrecognized before 1950. The "clot observation test" has become a routine procedure in suspected cases of afibrinogenæmia. It is stated that there are about 1000 maternal deaths from heart disease each year in the U.S.A. This caused 10·6% of all maternal deaths in the series investigated. Local anæsthesia is considered advantageous for the delivery of heart patients, and therapeutic abortion is rarely considered in the treatment of these patients. Dramatic results in the treatment of heart disease have been achieved by surgery in recent years, but the best time for surgery in cases of mitral stenosis is before the patient becomes pregnant. The authors conclude by stating certain general factors which have played an important role in lowering maternal mortality. These include: education, modern hospital facilities, and a state of "obstetric-mindedness" brought about by the Press, radio, television and maternity centre classes.

Promazine and Pethidine in Labour.

R. N. BOLTON AND R. C. BENSON (*West. J. Surg.*, September-October, 1958) have investigated the use of promazine and pethidine for analgesia during labour. The drugs were given intravenously in equal dosage of 50 milligrammes each, to 344 patients in labour. Analgesia was enhanced, and the hypnotic effect was pronounced, smooth and consistent. The amount of the analgesic agent was reduced. Hypotension was severe in two cases and marked in eight. The authors state that the blood pressure must be followed closely if this drug combination is used. Other minor side effects were noted, but none was serious, and all patients responded well to conservative therapy. Early labour is slowed by this combination of drugs, which should be withheld until cervical dilatation is well advanced and the contractions are strong and regular. As premedication for local and nitrous oxide anæsthesia, this combination is excellent. Fœtal depression is not entirely eliminated when promazine and even small doses of pethidine are used. The well-established criteria of timing of analgesia must be followed if an occasional case of severe fœtal depression is to be avoided. Premature infants do not tolerate this medication well. For this reason, the authors believe that promazine should not be given when the fœtus is premature.

S. P. WEGRYN AND R. A. MARKS (*J. Amer. med. Ass.*, August 16, 1958) discuss the use of promazine in labour and give the results of the treatment of 100 consecutive patients with promazine and pethidine followed by spinal anæsthesia for delivery. The pharmacology and side-effects of promazine are briefly discussed. Patients were given 50 mg. of promazine intravenously when they were fully in labour unless delivery was expected within one hour. After this, 25 to 50 mg. of pethidine were given intravenously as indicated. The spinal injection of 5 mg. of tetracaine was given with the patient in the horizontal position. The level of anæsthesia was then regulated. After the initial injection of promazine, patients were kept at absolute bed rest and a careful check was maintained on the blood pressure and the fœtal heart. After delivery the amount of blood lost was noted and the response of the newly-born baby was graded as alert, drowsy or asleep. Each case was then evaluated as a whole as excellent (no evidence of pain or discomfort), good (slight pain or discomfort), average (significant pain or discomfort), or poor (pain and discomfort throughout labour, with or between contractions). In 57% of cases the result was excellent, in 29% good, in 12% average, and in 2% poor. In 59% of cases the promazine injection was followed by a transient elevation of blood pressure, which was succeeded by an average depression of blood pressure of 7 mm. of mercury systolic and 8 mm. diastolic. The fœtal heart sounds were good in all cases except one, in which a single coil of umbilical cord was around the neck of the fœtus. After administration of the spinal anæsthetic the average blood pressure depression was 13 mm. of mercury, systolic, and 9 mm. diastolic. During labour 76% of the patients dozed and were relaxed throughout. Of the new-born infants, 85% were fully alert and cried vigorously on delivery. The authors note that the most prevalent side effect of promazine treatment was congestion of the patients' nose and throat. On account of this they consider any patient with a history of asthma to be unsuitable for this treatment. They conclude that promazine and pethidine in labour afford a method of producing analgesia and relaxation which appears superior to and safer than those employing other commonly used drugs.

Effect of Relaxin on Normal Labour.

L. V. DILL AND J. CHANATRY (*J. Amer. med. Ass.*, August 16, 1958) report the results of an investigation into the effect of relaxin on the cervix in normal labour. Relaxin was first isolated in 1926 as a water-soluble extract of the corpus luteum of sows. Its existence in other animals and humans was subsequently confirmed, and the hormone was alleged to have an influence on the dilatation of the cervix in labour. In the present trial 47 patients (24 primiparæ and 23 multiparæ) were treated with two commercial preparations of relaxin and one preparation of an inactive solvent used as a control. Patients in normal labour with the vertex presenting and the cervical os dilated between three and five centimetres were given one of the preparations of relaxin or the control solution by intravenous infusion. In each case the consistency of the cervix and degree of dilatation were assessed by vaginal examination before and after the injection. The authors emphasize the difficulty in evaluating the relation to the progress of labour of any drug or procedure aimed at influencing the dilatation of the cervix. Graphs are presented to show the observed and estimated rates of cervical dilatation in primiparous and multiparous patients treated with the two preparations of relaxin and the placebo. Certain patients with rigid cervices were treated

with increased doses of relaxin without any recognizable effects on the cervix. The authors conclude that, within the limits of the designed experiments, relaxin does not appear to have any significant effect on altering the consistency and dilatation of the cervix in normal labour.

Cytological Screening for Uterine Cancer.

P. CALABRESI, N. V. ARVOLD AND W. D. STOVALL (*J. Amer. med. Ass.*, September 20, 1958) report the findings from vaginal smear cytology in 65,163 women, with special reference to the significance of in-situ lesions in apparently healthy women. The investigation covers a large rural population without facilities for local cytology. Complete kits for the collection of vaginal smears and their return by mail were sent to local physicians on request. An "atypical" report was accompanied by a request for repeat smears; "suspicious" or "positive" reports indicated that biopsy was required for definite diagnosis. False positive reports measured by negative biopsy diagnosis numbered 9·3%. A review of false negative reports indicated that these cases included a relatively high proportion of adenocarcinomata of the body of the uterus. Smears which contained normal glandular cells from women who had passed the menopause were listed as showing "glandular cells normal in appearance but abnormal in presence" and a close follow-up with smears and curettage was advised. The authors state that the value of vaginal cytology in discovering carcinoma-in-situ of the cervix is demonstrated by the fact that three-quarters of the confirmed cases of carcinoma-in-situ were not clinically detectable. Local physicians carried out 90% of the biopsies requested. The incidence of squamous cell carcinoma of the cervix was 8·3 cases per 1000 persons screened, comprising 3·2 cases per 1000 of carcinoma-in-situ and 5·1 cases per 1000 of invasive cancer. Among 9111 women submitted to a second screening, a positive diagnosis was reported in 23 cases. These comprise 10 patients with carcinoma-in-situ, four with invasive epidermoid carcinoma, six with adenocarcinoma of the endometrium, two with adenoacanthomata and one with ovarian carcinoma. The rise in the number of unselected smears examined has been accompanied by a relative increase in the incidence of carcinoma-in-situ compared with invasive cancers. The authors state that the relationship of carcinoma-in-situ to invasive carcinoma of the cervix is not yet clarified. In the light of available information, they favour the concept that the intraepithelial lesion is an early stage in the development of invasive carcinoma of the cervix. They state that this study demonstrates the feasibility of reaching a large rural population for smear cytology on a "mail-order" basis without infringement of the local doctor-patient relationship.

M. T. MCLENNAN AND C. E. MCLENNAN (*West. J. Surg.*, September-October, 1958) present an evaluation of the prognostic value of positive findings on vaginal smear examination. They state that in two years 15,600 vaginal smears from 11,711 women were examined in the cytology laboratory of Stanford University hospitals. Positive findings were recorded for 165 women not previously known to have cancer (1·4% of the total number surveyed). Cancer was demonstrated by examination of tissue from 109 (66%) of those giving positive cytological findings; but 47 (28·5%) of the women with positive findings did not appear to have cancer. In the remaining nine instances, the follow-up information was incomplete. Thus, the incidence of proved cancer in the entire group was 0·93%. Diagnostic intervention after only a single positive cytological finding revealed unequivocal cancer in somewhat less than three-fifths of the patients under suspicion. But if tissue examination was postponed until a series of two or more positive cytological findings had been obtained, then more than four-fifths of the patients proved to have cancer. Positive findings from patients who did not prove to have cancer were often associated with vaginal or cervical infections, basal-cell hyperplasia of the cervix, atrophic, epithelium and cervical or endometrial polypi. The authors stress the value of maintaining a high index of suspicion in the interpretation of vaginal smear findings, but state that this attitude on the part of the laboratory personnel must be made known to the physicians submitting material for examination, lest unwarranted assumptions be made on the basis of equivocal cytological evidence only.

Mesonephric Carcinomata of the Ovary.

S. KAY AND R. H. HOGE (*Surg. Gynec. Obstet.*, July, 1958) report nine cases of ovarian carcinoma of presumed mesonephric origin. They state that these tumours are characterized by tubular structures often resembling Wolffian duct tubules. Branching dichotomous tubules may prove to be a prominent feature. The tumour cells frequently have clear cytoplasm, which in many instances stains for fat, mucin and glycogen. An exaggeration of the cytoplasmic vacuolization leads to a picture of hypernephroid carcinoma, which well resembles the clear-cell carcinomata commonly found in the kidney. When vacuolization is extreme, lipid material appears to be the principal component in the cells. These neoplasms are malignant, and when they arise in the ovary, they have a grave prognosis if capsular invasion and adherence to adjacent structures are present.

Optimum Frequency of Papanicolaou Smears.

B. SCHULZ, D. J. CARLSON AND E. A. BIRGE (*J. Amer. med. Ass.*, September 20, 1958) have analysed 15,389 cytological examinations for carcinoma of the cervix uteri for the purpose of deciding how frequently tests should be repeated when the results are negative. The applicability and reliability of vaginal smear cytology in the diagnosis of carcinoma of the cervix, particularly in the early stage, is generally accepted. As a routine screening test for cancer, enthusiasts have advocated its repetition at intervals of six months. Approximately 65% of the cytological examinations in this series are repeat studies done at intervals varying from six months to two and a half years. The results of smear examinations are classified as negative, atypical, suspicious or positive. During the past seven years the authors noted four false-negative smears, the true diagnosis being established subsequently by biopsy. Only one patient whose initial smear was classed as negative has subsequently exhibited abnormal cytology. Conversely, the interval between the initial finding of an abnormal smear to the final diagnosis of cancer has never exceeded 12 months. The authors conclude that when the same segment of the population is reexamined periodically the number of new carcinomata of the cervix discovered by smear cytology becomes progressively less and appears to represent in the main the introduction of new persons into the group. Lengthening the interval between cytological examinations to two years will not appreciably increase the risk of cancer to the patient if pelvic examinations are done at the same time.

ANÆSTHETICS.

Anæsthesia for Rammstedt's Operation.

R. A. L. LEATHERDALE (*Lancet*, May 3, 1958) discusses the problems of anæsthesia for Rammstedt's operation. He states that surgical treatment of infantile hypertrophic pyloric stenosis is now recognized as giving the best results, but that the technique of anæsthesia for this operation is still a matter of some controversy. His discussion is based on the experience of 150 patients treated by Rammstedt's operation in the United Oxford Hospitals between January, 1949, and July, 1957. Eight were operated on under general anæsthesia, in six cases because the anæsthetist concerned was more familiar with general anæsthesia in the surgery of the newborn, and in two because the diagnosis was in doubt. The remainder were operated on under local anæsthesia; this was preferred because it causes less systemic upset, feeding is more rapidly reestablished post-operatively, and the risk of post-operative vomiting is eliminated. Pre-operative treatment and premedication are discussed. An hour before operation the stomach was washed out through a rubber catheter passed through the nose, and chloral hydrate given as premedication in a dosage of one grain per pound of body weight. Atropine sulphate was given by injection at the same time, the dose being one two-hundredth of a grain, except for infants weighing less than five pounds, who received one three-hundredth of a grain. The anæsthetic technique is described in detail. Anæsthesia was induced by blocking the three nerves to the right upper rectus muscle. In most cases the anæsthetic agent used was 12 millilitres of a solution containing 0·25% lignocaine and adrenaline in a dilution of one part in 400,000. Two infants had convulsions when larger amounts were given. There were two deaths in the series, one from a liver disease of which pyloric stenosis was an incidental complication, the other from gastro-enteritis due to an infection acquired during convalescence.

Medical Societies.

AUSTRALIAN PÆDIATRIC ASSOCIATION.

THE annual meeting of the Australian Pædiatric Association was held at Canberra on April 19 to 21, 1958.

Recent Advances in Viral Infections in Childhood.

PROFESSOR FRANK FENNER (Canberra) read a paper entitled "Recent Advances in Viral Infections in Childhood" (see page 137).

Arthur Jeffreys Wood: A Pædiatric Profile.

H. BOYD GRAHAM (Melbourne) read a paper entitled "Arthur Jeffreys Wood: A Pædiatric Profile" (see page 144).

The Hypoplastic Aortic Arch Syndrome.

DOUGLAS COHEN (Sydney) read a paper entitled "The Hypoplastic Aortic Arch Syndrome". Dr. Cohen described the clinical features and pathological findings in a group of cases in which the following very constant developmental pattern was present: (i) atresia or hypoplasia of the aorta; (ii) a very large pulmonary artery; (iii) direct continuity of the pulmonary artery with the aorta immediately distal to the arch.

Dr. Cohen said that there were three subgroups, as follows.

1. Aortic valve atresia or extreme aortic hypoplasia. In those cases the left auricle was hypoplastic and an atrial septal defect was constantly present. The mitral valve was either absent or markedly hypoplastic, and the left ventricle was either absent or was no more than a rudimentary cavity. The very large pulmonary artery carrying the total cardiac output of mixed blood gave off right and left pulmonary arteries and then continued directly into the descending aorta. Those infants were usually in a markedly cyanosed condition from birth and became progressively more distressed, rarely surviving longer than a week or so.

2. Aortic hypoplasia and interruption of the aortic arch. In those cases the aorta was completely interrupted distal to the origin of the left subclavian artery. The ascending aorta and arch were hypoplastic, and the lower portion of the body was supplied from the right ventricle via the pulmonary artery in continuity with the descending aorta. A ventricular septal defect was present. Those children were also distressed from birth and rarely survived for more than a week or so. General cyanosis was usually present from birth.

3. The hypoplastic aortic arch syndrome. In that important group, the ascending aorta was hypoplastic and the pulmonary artery was very large and continued directly into the descending aorta after giving off its two pulmonary branches. There might or might not be a septal defect present. Cyanotic attacks, failure to thrive or even frank heart failure frequently occurred in infancy. The peripheral signs were often very suggestive of patent ductus, but that was not invariable. A substantial murmur was always present. It might be virtually continuous, but was frequently a long, systolic murmur. The auscultatory signs of pulmonary hypertension were present in most cases. X-ray examination revealed marked cardiac enlargement with gross increase in the pulmonary vascular markings. Cardiac catheterization had been carried out in some cases. Only a proportion of those cases were operable, and it was believed that interference should not be undertaken in infants under one year of age or in the presence of frank heart failure. At operation the wide pathway from pulmonary artery to aorta was divided and both ends were oversewn. Although only a limited number of those children would survive operation, there was a salvage obtainable provided they were carefully selected.

D. STUCKEY (Sydney) said that previously that used to be called "infantile coarctation", a bad term which should be reserved for the adult type. One should refer to it as "the hypoplastic aorta". The third group were the important ones to recognize, because of the possibility of some salvage.

M. POWELL (Melbourne) asked Dr. Cohen if he had seen the type in which the hypoplasia lay beyond the left subclavian artery, tapering down to the level of the ductus and then suddenly broadening. He asked if angiography had been performed in any of the cases.

In reply to Dr. Powell, Dr. Cohen said that the hypoplasia might extend to the aortic valve or the innominate artery, but he had never seen a case extend only as far as the subclavian artery. That type of case should be more amenable to surgery. No cases of definite differential cyanosis had been seen, that being obscured by the higher oxygenation of the blood in the pulmonary artery from the ventricular septal defect. Angiocardiography had not been performed to date because of the poor clinical condition of the infants and the fact that the syndrome was not fully recognized in the earlier part of the series.

S. P. BELLMAINE (Sydney) said that he was grateful for Dr. Cohen's statement that differential cyanosis might not be present in the classical syndrome.

J. BEVERIDGE (Sydney) asked if Dr. Cohen had seen the syndrome in conjunction with endocardial fibroelastosis, as such a case was known to him.

Dr. Cohen replied that any condition which caused left ventricular strain might lead to secondary fibroelastosis, and so it was reasonable to expect to find it in a proportion of cases.

W. CAREY (Sydney) said that at the King George V Memorial Hospital it had been found difficult to interpret skiagrams in neonates; reliance had to be placed on clinical signs and the electrocardiogram.

In reply to Dr. Carey, Dr. Cohen said that the skiagram was useful in demonstrating plethora or anæmia of the lung fields. In a cyanosed infant with anæmia of the lung fields and a normal heart, Fallot's tetralogy would be suspected, and surgery might be of value. If those signs were not present, surgery was not likely to help.

Symposium on the Management of Emotional Problems in Childhood.

W. RICKARDS (Melbourne) read a paper entitled "Some Principles in the Management of Emotional Disorders of Children" (see page 140).

ALAN JENNINGS (Sydney) read a paper entitled "The Contribution that might be made by the Pædiatrician and General Practitioner to the Management of Delinquency" (see page 146).

FELIX ARDEN (Brisbane) read a paper entitled "Experiences in the Application of Principles: Food Refusal" (see page 147).

F. CLEMENTS (Sydney) opened the discussion by posing four questions: (i) whether there was such a thing as a dual approach; (ii) what needed to be done for undergraduate and post-graduate education; (iii) what skills were necessary to make contact with children; (iv) whether that should be done alone, with individual patients, or as group therapy.

CLAIRE ISBISTER (Sydney) said that she thought that treatment at the conscious level was the job of the general practitioner. It was often undesirable for a psychiatrist's report to be sent directly to the school authorities, because they immediately concluded that the child was "nuts" because he had been seen by a psychiatrist. She thought that it would be preferable for the general practitioner to send a note interpreting a psychiatrist's report. However, she thought that it was questionable whether the average practitioner had time to acquire the requisite amount of knowledge needed to enable him to undertake more than the most superficial form of therapy. Group therapy probably would be useful in the management of the less serious forms of behaviour disturbance.

Dr. Isbister said that for the past year she had been conducting a class under the auspices of the Workers' Educational Association, in which most of the time was occupied by the parents' discussing amongst themselves their own problems, with occasional help from Dr. Isbister. It had been surprising how much benefit the women attending the class had felt they gained from those discussions.

Dr. Isbister said that it was important that parents should not become too dependent on a general practitioner for help in the management of a child. There was a type of mother who was all too eager to contact her doctor for specific instructions in what she should do in the details of child management. This type of mother, she said, could be helped by group discussion.

W. CAREY (Sydney) agreed with Dr. Isbister that group therapy had a place, and was valuable in achieving results on a short-term basis. He disagreed, however, with her statement that a note from a psychiatrist was likely to be misinterpreted by school teachers and others. He thought that it was essential for the children in the top two "boxes" to be handled by the general practitioner. Very few had time for that, so the problem came to the pædiatrician. In view of the large number of such cases, they would have to be handled by the pædiatrician.

Dr. Clements recalled that twelve months earlier Professor Ashley Weech had commented on the time factor. He, personally, devoted half a day each week to selected patients and that procedure had two effects: first, he became increasingly well informed in the matter, and secondly his skill had increased markedly, speeding up the rate at which cases could be handled. Dr. Clements said that one became

aware that problems had a basis early in life, and the pædiatrician should anticipate the handling of a situation at six months and prevent difficulties arising later.

N. M. NEWMAN (Tasmania) asked Dr. Rickards how many patients with emotional problems had come to his clinic in the first two levels, and whether the general practitioner handled most of them.

In reply, Dr. Rickards said that all children at the Royal Melbourne Hospital had to pass through the medical outpatients' department. The great majority of patients referred were suitable for treatment by the department, in that they had deep emotional disturbances and that they came into the "lowest box". In Australia psychiatry and psychotherapy were not synonymous, as they were in America where practically the only cases handled by the psychiatrist were given quite extensive psychotherapy. It was important, he added, to bear in mind that some of the parents of disturbed children might be psychotic.

PROFESSOR L. DODS (Sydney) remarked that that was a challenge to pædiatricians and that he would like to hear Dr. Rickards's view on the method of teaching the subject to fifth and sixth year students. At the Institute of Child Health in Sydney there was a programme which attempted to give the student some insight into the problems, and he had been impressed by the aura of interest displayed by the students. Professor Dods thought that the subject should never be taught didactically, for example with typed notes, and pædiatricians should set an example with their approach to patients.

BOYD GRAHAM (Melbourne) said that at a recent conference he had advocated that special officers should be appointed to schools to collect information about maladjusted children, followed by an interview with the parents. If that did not lead to a solution, the child should be referred to a child guidance clinic.

CLIFTON WALKER (Sydney) said that a problem which existed in obstetric hospitals was of babies who would not feed; a baby's appetite should be the guide to the amount of food to be given. Many of those babies were the product of difficult labours, which might have been associated with microscopic hæmorrhages, leading to drowsiness. It was common to blame lack of parental control and neglect of spiritual guidance for disturbances in children, and even for delinquency. Maybe, in some children, those had their origins in a difficult labour, and perhaps the obstetrician was really to blame, not the parents.

R. SOUTHBY (Melbourne), commenting on Dr. Jennings's statement that the team approach should be used to solve the problem of delinquency, said that a minister of religion might be able to make a contribution.

Dr. Jennings agreed.

S. STENING (Sydney) remarked that it was well known that in a normal Chinese society there were no delinquents because of the strong influence of the family.

E. KENT-HUGHES (Armidale) asked Dr. Rickards his opinion on the extent to which the fact that a mother worked outside the home led to behaviour problems and delinquency. She asked whether it was likely that the child would resent coming home to an empty house, and be tempted into actions which might lead to antisocial behaviour.

D. GALBRAITH (Melbourne), summarizing the discussion at the request of the chairman, said that it would seem that many emotional problems in children had their origin in the home and that there was a tendency to centralize therapy, when it would be more satisfactorily handled by the general practitioner who knew the family. Where there was a high degree of community pride and the family could be involved in community activities, there was often a reduction of tension or a relief of behaviour disturbances or even delinquent behaviour. In some Melbourne suburbs, Dr. Galbraith continued, street committees had been formed to provide mutual assistance to their members in a wide range of spheres—even to the solution of behaviour problems.

Renal Infarction and Perirenal Hæmorrhage in the Neonatal Period.

T. Y. NELSON (Sydney) read a paper entitled "Renal Infarction and Perirenal Hæmorrhage in the Neonatal Period" (see page 148).

S. P. BELLMAINE (Sydney) said that a few years ago he had had a case comparable with the septic group. The patient had conjunctivitis on the fourth day, and hæmaturia and palpable right kidney on the ninth. The kidney was excised as a "Wilms". Fortunately, 48 hours earlier he had put the infant on broad-spectrum antibiotics on general principles. Section of the kidney showed an infected renal thrombosis. On demonstration, the pathologist stated that she not infrequently met with infarcts in the kidney of infants who died of congestive cardiac failure in the early days of life from congenital heart disease.

Dr. Nelson, in reply, said that Dr. Bellmaine's case was an ordinary case of infarction associated with sepsis. Sandblom's case was in a different category, with no known association with sepsis.

K. CAMPBELL (Melbourne) asked if any of the mothers of those children had suffered with illness in the last few weeks of pregnancy.

Dr. Nelson replied that no factors were found to account for the disease.

R. SOUTHBY (Melbourne) asked Dr. Nelson if that was a possible manifestation of hæmorrhagic disease of the newborn in the neonatal period.

Dr. Nelson replied that it was a localized lesion, with no other evidence of disease.

JOHN COLEBATCH (Melbourne) said that he had seen a few of the septic varieties, but none of those idiopathic cases. One case had been associated with a large hæmatoma which was treated by blood transfusion in the neonatal period, but that infant did not have hæmaturia.

Dr. Nelson replied that most of the cases described had had hæmaturia. He thought that the case mentioned by Dr. Colebatch was probably related to trauma, which would not explain the other cases.

Bilateral Congenital Choanal Atresia in the Newborn.

PETER JAY (Adelaide) read a paper entitled "Bilateral Congenital Choanal Atresia in the Newborn" (see page 151).

A. R. WAKEFIELD (Melbourne) said that he thought that that was an unusual condition, and that he had seen mainly unilateral cases, seen later in life, though Dr. Campbell had had a patient who died, who had been examined with reference to further treatment. An older person had a bigger cavity, with which it was possible to provide epithelial cover after removal of the blockage. In the old that was essential, followed by dilatation for three months after epithelialization had occurred, by which time subepidermal fibroses would have ceased. In the newborn, Mr. Wakefield said that Dr. Jay's was the only method available, and that he thought that if one could continue with dilatation for three months after epithelialization had occurred, one would get a permanent result. The only other possibility, Mr. Wakefield thought, was to split the palate widely in the midline, into the nasal cavity, creating an artificial cleft palate. One could then deal with the choanal atresia and the cleft palate at leisure.

K. CAMPBELL (Melbourne) said that she had seen three patients with choanal atresia, two of whom survived. She had found that an unfolded paper clip covered by a catheter and hooked on to the nose was a simple means of allowing the baby to breathe.

Dr. Jay said that any method, no matter how simple, was commendable.

Peptic Ulceration in Childhood.

ERIC GOULSTON read a paper entitled "Peptic Ulceration in Childhood" (see page 150).

PROFESSOR L. DODS (Sydney) said that the condition was more common than was realized, and that he would like to ask for information about the age group and emotional factors. Professor Dods stated that in a group of four hundred children in Manchester, the highest incidence was in the 11 to 12 years group; that was attributed to the "11-years-plus" examination, which was a very significant examination in the United Kingdom.

Dr. Goulston replied that he could not comment further on that theory.

D. MACKAY (Adelaide) asked Dr. Goulston if he had found any pattern of symptoms in cases of peptic ulcer in children, comparable with the familiar symptomatology in adults. He also asked Dr. Goulston if he would care to comment on the finding of a niche in the skiagram of a patient otherwise well.

Dr. Goulston replied that he did not know of a clinical correlation, as most cases presented with complications.

S. E. L. STENING (Sydney) said that he would like to thank Dr. Goulston for his interesting paper. He commented that he had seen two patients in the last year in both of whom emotional factors had played a large part in the symptomatology. Relief had been gained in the case of the first by a change in his school and in the other by rejoining his playmates.

R. SOUTHBY (Melbourne) said that the ulcer history in the child was the same as in adults. One boy he had seen had had classical ulcer pain and similar X-ray findings to adults. Under medical treatment he was well, but seven years later he still had his ulcer. He said that there was a very gross

emotional disturbance in those children. For example, another child who was found to have an œsophageal stricture, hiatus hernia and ulcer, presented as a "behaviour problem"; he had intense, burning, substernal pain, relieved by bicarbonate bought with his pocket money. Dr. Southby further inquired if Dr. Goulston had seen any peptic ulcer associated with hiatus hernia. He recalled a case of suspected pyloric stenosis which on X-ray examination showed a niche etc., in a five-weeks-old baby.

In reply, Dr. Goulston said that there were no peptic ulcers with hiatus hernia in the cases described.

H. N. B. WETTENHALL (Melbourne) said that he would like to make two points: First, many children had abdominal pain. He asked what were the best criteria for diagnosis. Secondly, prednisone was well known to be associated with gastro-intestinal hæmorrhage and might have little advantage over cortisone itself. If it was used the tablets should be crushed before being taken, and it was wise to give aluminium hydroxide, or a similar medicament, in conjunction with it.

Dr. Goulston said that the condition was difficult to diagnose. A search for occult blood in the stool, and a noting of response to therapy, might be of some value.

CLIFTON WALKER (Sydney) said that he had seen a stillborn infant with a duodenal ulcer, and that he considered that the diagnosis should be considered in any bleeding from the gastro-intestinal tract, even in a neonate.

S. W. WILLIAMS (Melbourne) said that he thought that it was a pity to indulge in many barium meal X-ray examinations for abdominal pain. He thought that an astute physician should diagnose many cases without the help of a barium meal. Gentle care was very important. He had found the statistics very illuminating and thought that it must be much more common than indicated.

MOSTYN POWELL (Melbourne) said that adult-type peptic ulcer was not a common cause of abdominal pain in childhood, although he had had two cases in which the symptomatology was strikingly like adult peptic ulcer. He agreed with Dr. Williams that it was a rare disease.

Pyuria in Childhood.

JOHN McDONALD (Sydney) read a paper entitled "Medical Aspects of Pyuria of Childhood" (see page 152).

DOUGLAS STEPHENS (Melbourne) read a paper entitled "Chronic Pyuria in Children" (see page 154).

PROFESSOR L. DODS (Sydney) asked what advice should be given to a physician with a patient who had residual urine on double micturition. He asked whether a micturating cystometrogram should be performed and, in the child without residual urine on double micturition, whether one should proceed directly to an intravenous pyelogram.

Dr. Stephens replied in the affirmative to the first question, but said that a positive result to the double micturition test should be confirmed by getting the mother to make a double micturition chart once a day for a week. If this gave constantly positive results, then residual urine would be present and its location could be confirmed with a micturating cystourethrogram. If the double micturition test gave a negative result, then one should proceed directly to intravenous pyelography. If the micturating cystourethrogram gave a positive result, an intravenous pyelogram would be necessary; but when there was vesico-ureteral reflux, the technique of intravenous pyelography should be modified. The modification consisted of the placing of an indwelling catheter in the bladder to drain off the iodide which accumulated there, thus preventing a misleading assessment of kidney function resulting from reflux of iodide from the bladder back to one or both kidneys.

FELIX ARDEN (Brisbane) said that he had been worried with cases of chronic renal infection without anatomical abnormality and asked Dr. McDonald how long treatment should be continued in such cases.

In reply, Dr. McDonald said that first, in acute attacks, full treatment should be given for three weeks, followed by a further three weeks at half dosage. Secondly, in chronic recurrent attacks, the patient should be treated indefinitely. He had found that many of those patients achieved normal urine after a period of treatment, then infection would reappear, due to the same organism now drug-resistant or to a new organism. Thus one must treat those patients with the appropriate drug, changing as the sensitivity cultures indicated. The girl illustrated had had six drugs and had now been on a combination of two drugs continuously for the past four months, during which time her urine had remained normal. In general, Dr. McDonald concluded, treatment should be continued for at least six months, probably longer.

HOWARD WILLIAMS (Melbourne) asked how often boys were seen with infection without obstruction.

Dr. McDonald replied that it was very rare, except in neonates, when pyelonephritis was as common or more common in males than in females. It was in cases of neonatal pyelonephritis that congenital abnormalities of the nephron were often present, and those may have been responsible for infection occurring.

K. CAMPBELL (Melbourne) asked if there was any place in the investigation of the condition for microdissection of the kidney.

Dr. McDonald said that there certainly was, especially when there was no macroscopic abnormality. Very little was really known about the anatomy of the nephron in pyelonephritis.

DOUGLAS COHEN (Sydney) asked Dr. Stephens whether one should postulate more than an anatomical abnormality, as studies with an image intensifier had shown that peristalsis quickly emptied the normal ureter. He asked if Dr. Stephens had done any pressure studies within the ureter which might throw some light on that. He also asked Dr. McDonald if he could give a simple outline of the order of investigation in relation to the presenting symptoms.

Dr. Stephens said that he had used an electromanometer, and had found that there was a strange peristaltic action in the dilated ureter compared with the normal calibre ureter. The dilated ureter showed a long, low wave, which was synchronous with a vigorous peristaltic effort and which could clearly be seen radiographically or at operation. That was in direct contrast to the short, sharp, spike waves of the normal calibre ureter. The anatomically enlarged ureter, though showing a tambour-like electromanometric tracing, had, in fact, good physiologically coordinated peristalsis.

Dr. McDonald said that the urinary stream and external genitals were observed. The double micturition test was performed and an estimation of residual urine was made. A microscopic and biochemical examination of the urine was performed, the presence or absence of albuminuria being of little significance. Dr. McDonald continued that, in a first attack of pyelonephritis, intravenous pyelography was performed for the purposes of his survey. For recurrent attacks intravenous pyelography was performed, or if a double micturition test gave a positive result a micturating cystourethrogram was performed first. Retrograde pyelography, with differential function tests, should be performed if further information was required; cystoscopy and urethroscopy were done at this last-named procedure.

A. R. TINK (Sydney) queried the use of intravenous pyelography in a first attack. He suggested that it might be a needless irradiation hazard to the gonads, and asked if it was thought that enough information was obtained to warrant its use in a first attack, as all that could be determined would be function on both sides and gross hydronephrosis. He made the point that it was possibly better to make other investigations first.

MOSTYN POWELL (Melbourne) said that he used uncentrifuged urine in practice as he was in little doubt in uncomplicated cases. However, he had been a little disturbed by the speaker stressing the importance of bacteria only in urine.

Dr. McDonald, in reply, said that there was probably no difference in the use of a centrifuged specimen of urine; it was just that he used that technique. He went on to say that it was important to be certain that the collection of urine was properly done. The proper specimen was a catheter specimen in females and a clear midstream specimen in males. That should be taken in a sterile container, and the examination performed within the following hour, with no contamination. Lately he had been using clean midstream urine from females and getting just as good results, without contamination, if the genitals were cleansed and the sterile technique was used in collection. If a lot of bacteria were seen in the urine, which had been carefully collected and examined within the hour, they were significant, as they did not occur in a normal child. Also, leucocytes did not occur in a normal child.

Chemotherapy in Primary Pulmonary Tuberculosis.

DOUGLAS GALBRAITH read a paper entitled "Primary Tuberculosis: Is Chemotherapy Necessary?" (see page 155).

HOWARD WILLIAMS thanked the speaker for drawing attention to that aspect of the treatment of tuberculosis. He said that he classified the cases into three groups: (i) Cases of acute illness, in which there was no argument about treatment. (ii) Cases of active lesion in a young child, in which there was not much doubt as to treatment (we did not know if chemotherapy speeded the healing of caseous glands). (iii) Cases of recent infection in patients who appeared perfectly well, with little or no radiological change; in those cases doubt existed about the value of chemotherapy. Dr. Williams continued that previously he had believed that it was worth while watching; by and large he thought they had done well. He said that those trials had shown that there was 1% to 3% risk of late hæmatogenous spread. That had been stopped by chemotherapy, and now there was no

doubt of the value of the therapy in lessening that risk. Dr. Williams thanked Dr. Galbraith for drawing attention to the two trials and three clinical cases.

S. W. WILLIAMS (Melbourne) said that Dr. Galbraith had presented a good story. He agreed that INH usage was justified. He thought that it was a valuable drug because it penetrated into caseous tissue, as compared with streptomycin which did not. Australian conditions, he thought, might vary from those in Paris and London, where the clinical trials discussed were carried out, because of some economic superiority.

Dr. Galbraith agreed that a difference might exist, but as the experiments were so well controlled he thought that the results were valid. The cases were occurring in Australia, as illustrated by the three cases quoted. Those cases were under observation, he said, at the time of diagnosis.

J. BEVERIDGE (Sydney) thanked the previous speakers and said that he thought that the evidence was now convincing for chemotherapy. He had two questions to ask Dr. Galbraith: (i) As regards dosage. The Americans had regretted selecting four to five milligrammes per kilogram per day of INAH only. He asked Dr. Galbraith if he could advise on whether to use PAS and INAH together, and if so in what dosage. (ii) As regards case selection. Dr. Beveridge thought that the time of exposure was difficult to estimate, but that age and calcification of the lesions were helpful in that regard. He asked Dr. Galbraith if he could advise on the management of patients with a positive result to the Mantoux test who showed no other symptoms and had clear skiagrams, remembering the hazard of possible pubertal breakdown.

In reply to the question by Dr. Beveridge as to further details of treatment, Dr. Galbraith said that experienced opinion was fairly unanimous that isoniazid was the most valuable chemotherapeutic agent, and that although there was still debate about that it was probably wise to give PAS at the same time. However, it should be noted that PAS tablets frequently passed through the bowel unchanged and unabsorbed. He used PAS in a mixture flavoured with syrup of orange and in dosages of approximately 300 milligrammes per kilogram in 24 hours. As to the dosage of isoniazid, Dr. Galbraith thought that there was something to be said for the argument of Dr. Katherine Hsu (1957) that in young children a calculation based on surface area seemed more appropriate than one based on weight. For the newborn she advised 17 milligrammes of isoniazid per kilogram, diminishing gradually to seven milligrammes per kilogram. Dr. Galbraith said that he used not less than 10 milligrammes per kilogram. He considered the dosage of four to five milligrammes per kilogram in the United States prophylaxis trial to be too small and wondered if even more striking results would have been obtained with a higher dosage.

In reply to the question by Dr. Beveridge as to procedure to be adopted when confronted with an apparently healthy child with a positive Mantoux reaction, Dr. Galbraith said that that would depend on the age of the child and on any knowledge of how recent was the Mantoux conversion. It was difficult to be dogmatic, but if there was any doubt at all he would give chemotherapy.

Acute Subdural Hæmatoma of the Newborn.

M. SOFER SCHREIBER read a paper entitled "Acute Subdural Hæmatoma of the Newborn" (see page 157).

K. CAMPBELL (Melbourne) said that in midwifery hospitals such gross cases were very seldom seen. That suggested that the cases described might owe their severity to the fact that treatment was sought at a later date. It was often a precipitate second stage of labour which caused the hæmorrhage. Dr. Campbell said that in Melbourne the practice was to do burr holes rather than the more radical osteoplastic flap, probably because the cases seen were milder. She asked what was considered the best time for operation in the milder cases.

In reply to Dr. Campbell, Dr. Schreiber said that the cerebral compression should be relieved as soon as possible. One should not decide to wait a few days before removing the clot causing cerebral compression in an ordinary adult head injury. When clotting had occurred and burrholes were made, only a small proportion of the clot could be removed, because the increased intracranial pressure tended to push the brain tissue out through the burr hole like toothpaste through a tube. It was probably better to turn down a wide osteoplastic flap and to make multiple incisions in the dura, through which much of the clot could be washed out. These dural incisions were then sutured. Then, in a few days' time, when the cerebral œdema had subsided, a second craniotomy could be performed (if it appeared that much clot still remained) and then the dura could be widely opened and any residual clot removed.

CLIFTON WALKER (Sydney) thanked the speaker and said that he thought that the frequency of the lesion on the right side could be explained by the fact that the majority of babies were delivered in the left occipito-anterior position, so that the right parietal area took the stress.

R. SOUTHBY (Melbourne) thanked Dr. Schreiber and stressed the importance of convulsions in the first 48 hours of life, especially with localizing signs.

E. TURNER (Melbourne) said that the third nerve lesion was very unusual in her experience and she had noticed increased tonus on the affected side.

S. P. BELLMAINE (Sydney) said that he had found the third nerve lesion very commonly, in six cases or more, but thought that it was easy to miss unless deliberately sought.

Dr. Schreiber said that most of his cases had manifested a third cranial nerve lesion. In many cases that was only a mild dilatation of one pupil and could easily be missed. Dr. Schreiber did not think that his cases owed their severity to the fact that treatment was sought at a late stage. He thought that those cases had a definite latent period before the onset of severe diagnostic symptoms and signs and he thought it probable that many of the mild cases described by Dr. Campbell and Dr. Turner did not fall into the group under discussion.

J. COLEBATCH (Melbourne) thanked the speaker and asked him to amplify the position of the use of subdural tap prior to lumbar puncture and the indications for it; also, to comment on hæmorrhagic disease of the newborn giving rise to subdural hæmatoma and what prophylaxis should be advised.

In reply to Dr. Colebatch, Dr. Schreiber said that those cases had a large, unilateral, supratemporal, space-occupying lesion, and had — or later developed — evidence of temporal herniation (the "third nerve lesion"). As a lumbar puncture with removal of cerebro-spinal fluid dangerously aggravated such a herniation, it was obvious that the first investigation should be the performance of subdural taps, and a lumbar puncture should only be performed in cases in which those taps gave clearly negative findings.

With regard to the relationship between hæmorrhagic diseases of the newborn and acute subdural hæmorrhage of the newborn, Dr. Schreiber said that two of the 20 cases were associated with multiple extracranial hæmorrhages and appeared to have been caused by hæmorrhagic disease of the newborn. In the 18 other cases there was no evidence of hæmorrhagic disease. In no case was operation followed by further hæmorrhage. In all cases vitamin K was administered prophylactically.

The Surgery of Peno-Scrotal Hypospadias.

SIR KENNETH FRASER (Brisbane) read a paper entitled "Personal Experiences in the Surgery of Peno-Scrotal Hypospadias".[1] He said that the repair of hypospadias, as they all knew, was required for social, reproductive and psychological reasons. Any boy with a degree of hypospadias which prevented him micturating in the erect position, which would when he grew up interfere with his normal sexual capacity, or which was likely, at any time during his life, to cause him serious embarrassment or to focus undue and disturbing attention on his genital disability, must undergo reparative surgery for cure of his deformity. Minor degrees of hypospadias which would result in none of these disabilities should not be subjected to major surgery; apart from any desirable minor adjustment to the prepuce or a meatotomy when required, any surgical intervention in such cases was not only unwarranted, but was also actually meddlesome.

Peno-scrotal hypospadias, to which Sir Kenneth Fraser limited his remarks, always, of course, needed surgical correction. He said that those of his generation whose clinical experience went back some thirty years would agree that the results generally, in peno-scrotal hypospadias repair in experienced hands, whatever method was used, had improved materially within their memory. There was, he would think, universal agreement that that was due in the main to three factors—refinements in technique, antibiotic "cover" in the post-operative period, and advances in anæsthesia—though there might be some difference of opinion as to which of those factors had played the leading part. However, in spite of the general improvement in results, it was indisputable that initial and uninterrupted success and a trouble-free long-term post-operative history were not yet a sine qua non in any large series.

He said that it was the responsibility of any surgeon undertaking that work to approach it with an open mind, and to persevere until in the fullness of time he settled for a technique which would, he thought, in his hands give the most satisfactory results. It was surgery that should rightly be restricted to those who had the opportunity to deal with a succession of cases, and was certainly not an operation to be

[1] This work has been reported in full elsewhere (*Australian & New Zealand J. Surg.*, May, 1958).

undertaken lightly by the occasional and over-enthusiastic surgeon. It was a type of work in which the good old-fashioned principle of apprenticeship should not be forgotten, for in those operations there were indeed many pitfalls which could be learnt from the written word, or even from watching masterly surgery from a gallery.

Sir Kenneth Fraser said that the aims and objectives of the repair, as he saw them, were, in the order of their importance: (i) the establishment of a penis and urethra functionally perfect and anatomically reasonably akin to normal; (ii) the avoidance of post-operative fistula formation; (iii) a successful surgical result at a reasonably young age; (iv) comparative freedom from pain and discomfort during the post-operative period; (v) a short time in hospital.

A review of the literature showed that a great many different methods of repair had been advocated; Meredith Campbell pointed out that at least 150 different techniques had been described. However, in the last fifteen years there seemed to have been, in the English-speaking world at least, a trend to employ one or other of three different principles of repair, with, of course, minor difference of technique in individual hands, whichever method was used. These three methods were as follows: (a) the inlay graft; (b) the Denis Browne technique; (c) the Cecil technique.

Sir Kenneth Fraser said that he had tried out a number of different methods over the years since he first became interested in that work more than twenty-five years earlier, and he had suffered his full share of setbacks and disappointments. However, since the war he had been fortunate in having at his disposal sufficient clinical material to evaluate different methods adequately. For some time he had employed a modification of the Cecil technique, which he had found, in his hands at least, gave far more satisfactory results than any other method. He was not suggesting for a moment that that was the only road to success in peno-scrotal hypospadias repair; also he did not intend to compare and contrast that method with others. Instead, he proposed to give some idea of the technique employed, to draw attention to some of the virtues of the operation, to give in brief the story of 11 consecutive cases so treated, and finally to show photographs of each one of those 11 children micturating after his repair had been completed.

(A series of coloured slides was then presented to demonstrate the progressive steps in the two-stage operation.)

Sir Kenneth Fraser said that some of the obvious virtues of the modification of the Cecil technique were as follows: (i) post-operative œdema was slight and the likelihood of wound disruption was minimal; (ii) post-operative fistula would be avoided completely; (iii) stay in hospital was not prolonged; (iv) subsequent dilatation was never needed; (v) the penis was ultimately a satisfactory shape and the urethral orifice was so close to the normal position that the difference was not noticeable.

Sir Kenneth Fraser said that his 11 patients had their operative repair commenced and completed by this method over the period July, 1956, to March, 1958. The average age at operation was seven years and nine months, but it could have been much younger than that if some of the patients had presented for treatment earlier. The interval between the two operations averaged three and a half months, and the total average time in hospital for the completion of the two operations was 20 days; the longest individual stay in hospital for any one stage was 16 days, and the shortest total time for the two operations in any one case was also 16 days. There was no persisting urethral fistula in any of the 11 cases, and there were no complications requiring secondary operation. The penis was of satisfactory normal appearance in every case, and the urinary stream, without exception, was of good volume and directed well forward without spraying. (Photographs of each of the 11 children were presented to show the strength and fullness and forward direction of the urinary stream in each case.)

Sir Kenneth Fraser said that, finally, he was sure that those surgeons who had interested themselves in that work would agree with him that they were greatly indebted to those surgical pioneers of past generations whose efforts had paved the way for the reasonably satisfactory results they could achieve today.

A. R. WAKEFIELD (Melbourne) said that he was not satisfied with current trends in repair, though the older types must have been a surgical chore. The results, after many complications, were very poor. The advent of some new methods had improved the state of things, but much still remained to be done in that field. There was a steady stream of young adults to be seen going to adult hospitals, often after having been married and finding the situation impossible. Often the condition was seen casually, the patients not complaining of it. Those cases showed residual chordee, which prevented satisfactory sexual intercourse.

The prime aim in treatment, Mr. Wakefield stated, was to establish a satisfactory mechanism for intercourse. Far too much stress had been laid on the ability to pass urine. The order of importance, he thought, was: (i) satisfactory intercourse without pain; (ii) the ability to have children, that is ejaculation; (iii) a penis near normal; (iv) the ability to urinate from the tip of the penis. Technically, he said, the prime aim was to correct chordee. In many operations described, that had been overlooked. The stress should be on urethral reconstruction. Cases of significant chordee could not be corrected by making a transverse incision and sewing up vertically. It was necessary to dissect widely and laterally, removing fascia up to the glans, thus obtaining a urethral orifice well back at the peno-scrotal junction. It could not be closed by suturing. Extra skin must be obtained, for example from the prepuce. The urethral reconstruction was not the prime objective—the organ must straighten out.

Mr. Wakefield said that the results of urethral reconstruction operations were not uniformly satisfactory: (i) inlay grafts had many complications; (ii) the Denis Browne technique was a most unsatisfactory procedure. The best result gave a penis with a floppy end, with the urethral opening not on the glans. Moreover, chordee was never corrected by the Denis Browne method. Mr. Fraser's technique was a substantial advance on that, in that it emphasized the correction of chordee. The presence of hairs on the scrotal skin should be remembered, and its use avoided if possible.

Mr. Wakefield considered that the procedure which gave the best final result to date was first to correct chordee by the age of four years, and secondly to perform an inlay graft after puberty, provided that time and expense were no object.

G. WYLLIE (Adelaide) agreed with most that Mr. Wakefield had said. He said that he thought that Mr. Wakefield's emphasis on the correction of chordee was most important. Denis Browne emphasized the first stage much more than the second. He himself did meatotomy at that stage, though the second stage was often done with a small meatus, and that was a poor technique. In Mr. Fraser's type of case, he said, the possibility of intersex always had to be assessed. A verumontanum and prostate must be seen, but no vagina. In the Denis Browne operation the end result was rather bulky under the glans. Mr. Wyllie said that that was the only operation with which he had had experience, but that he thought that more should be done to bring the meatus to the tip of the glans, using loose skin available after the definitive repair. He had found a stitch through the glans very useful, pulling up the distal double stop suture. He had found it impossible, he said, to assess the size of the meatus and how loose the skin was going to be in six months' time.

Mr. Wyllie stated that he believed that everyone was worried by lateral fistulæ forming in the suture holes. The important thing there was the perineal urethrostomy, draining for several days after the removal of sutures. The catheter was important from the sixth day, when double stop sutures were taken out, until the twelfth to fourteenth day. It was in that critical period that fistulæ were likely to occur.

Mr. Wyllie concluded by saying that he thought that adverse criticism of operations one had not performed oneself was a bad principle, and one hesitated to comment on Dr. Fraser's operation, although four of his five virtues were common to other operations. The Denis Browne operation, in his hands, had given the most satisfactory results, although he was still worried by redundant skin and the fact that the meatus was not at the tip of the glans.

Mr. Wakefield said that he hoped that he had not given the wrong impression, that was, that elaborate methods were better, *per se*, than simpler ones. All had complications. If they could get away with it, inlay grafting was best if carried out as had been described. No other procedure gave a meatus at the tip of the penis and looked normal from the outside. The correction of chordee depended, he believed, on the original operation rather than on subsequent urethral reconstruction. Mr. Wakefield said that he did not hold any brief for any operation, but was still trying to find the operation which gave the best result. He had given the Denis Browne procedure a reasonable trial, but was dissatisfied. It was a vast improvement on Ombrédanne's older procedure, but still fell short of the ideal.

F. D. STEPHENS (Melbourne) said that he intended coming to the meeting in a few years' time with a series of cases, but that results could not be assessed in less than fifteen years. He thought that it might be worth while if someone set to work and took histories of hypospadias cases to discover: (i) the number of patients married; (ii) the number of satisfactory sex relations; (iii) the number of children. Mr. Stephens said that a retrospective survey would be useless in his opinion.

Mr. Wakefield replied that nothing was known of the history of those patients, and even if a survey related only to the older procedures it would be of value. He con-

tinued that the Denis Browne procedure had given satisfactory results with some adults. Others had difficulty. Some were able to have children. However, the complication rate, difficulties and residual deformities were still too high.

D. COHEN (Sydney) asked whether, in a case of a small penis, not an intersex, attempts to repair it should be persisted with or whether the penis should be removed.

Mr. Fraser replied that intersex should always be considered. Urethroscopy should always be performed in cases of doubt, and on occasion laparotomy and biopsy of the gonads were indicated. Skin or mucosal biopsy was also desirable on occasion. In deciding what procedure should be done, every case of intersex in a patient with a small penis must be considered on its merits; if it were at all possible, plastic surgery to convert the patient to the male pattern would have to be attempted.

N. MYERS (Melbourne) asked if there were any trouble after marriage seen after the Denis Browne operation.

Mr. Wyllie replied that the procedure had not been practised long enough for that to be known.

M. S. SCHREIBER (Sydney) asked about the treatment of perineal hypospadias.

D. MACKAY (Adelaide) asked the opinion of the members about the problem of the "angled head"—that is a penis in which no chordee was present, but which was not, even so, a cosmetic structure. He wondered if there was some minor procedure for lessening this angle. His comment on the Denis Browne technique was that it was a simpler operation than most others and in the hands of the general surgeon it was the one which gave the most reasonable chance of success. He stressed the point that in the correction of chordee it was important that all atrophic corpus spongiosum was dissected out.

In reply to Mr. M. S. Schreiber's query concerning perineal hypospadias, Mr. Fraser stated that he did the Denis Browne type of repair to the peno-scrotal opening. That was the easy part of the operation, for when doing it one always had hairless skin lying as a groove up to the peno-scrotal junction. When that was done the standard operation was performed. The angled head was not a functional disability, he said, although it might be a psychological one. A ventral groove, passing from the position of the normal urethral opening towards the hypospadiac opening, was often seen in those cases; interrupting this groove was a transverse ridge. Removal of this ridge would allow the urinary stream to pass uninterruptedly forward, in spite of some risk of mild chordee limited to the glans. With regard to the performance of meatotomy, Mr. Fraser stated that he took the same view as Mr. Wyllie. In his recent series of cases, five patients had had meatotomy and one had had a second meatotomy. Definitive hypospadias repair, he thought, was doomed to failure if the hypospadiac urethral orifice was not capacious enough. The Denis Browne operation had no margin of safety, as epithelium had every opportunity to grow quickly through stitch holes, establishing a permanent fistula. With the repair illustrated the previous day, he thought, even if minor leaks from the urethra did occur, there was less liability for fistula formation, as the new urethra from which the urine was escaping was remote from the skin surface.

In reply to Mr. Wakefield, Mr. Fraser said that he agreed that it was best to wait until the patient was sixteen years old before attempting an inlay graft, for the skin of the arm was lacking in elastic fibres and unlike the urethra in texture. Therefore it was necessary to wait until the penis was essentially adult. Someone had suggested that Mr. Fraser's repairs had a beard. However, he said that careful examination would show that very little hair grew in the region of the midline of the scrotum.

Concerning chordee, he fully agreed with Mr. Wakefield. He himself did a very extensive dissection and he never hesitated to reoperate if a chordee operation had not adequately straightened the penis. With a slightly different technique, he had been employing the operation, in principle, for 25 years and could show men who had had this operation whose penis was now straight or with a minor degree of chordee which in no way prevented normal coitus. No mention of chordee had been made the previous day. One must remember the type of ultimate repair.

Concerning inlay graft, there was no need to worry about hair. However, if in subsequent repair it was necessary to use ventral penile skin, it was necessary to be very careful that it did not contain any hair, remembering that hair grew normally on the ventral surface of the penis. If one hair follicle was present in the reconstructed urethra, it would be enough to cause trouble.

Mr. Fraser thought that the transverse incision, sewn up vertically so as to straighten, was an unsatisfactory way of repairing chordee. His own technique was to use a strap flap from the prepuce. The preputial skin so employed was very thin, but had remarkable virility; care had to be taken to smooth it and to completely cover the raw area, which one had to leave in properly, overcoming the ventral bowing of the penis. The preputial skin was non-hair-bearing, and closely resembled the mucosa of the normal urethra, histologically; it was ideal for the subsequent reconstruction of the urethra.

In the operation for chordee the constricting elements of the rudimentary corpus spongiosum had to be dissected off in their entirety, until the penis could easily be hyperextended over the left index finger of the surgeon. An intensive pressure should be used to ensure that the graft continued to sit so firmly that a satisfactory "take" was assured.

In reply to Mr. Wyllie, Mr. Fraser said that, in principle, it was deemed correct to bring up a child in accordance with its gonadal and genetic sex, although he had two children under his care at the present time who were gonadally male but who had external genitalia which followed in every detail the normal female pattern, including the presence of a small vagina. He could not envisage how cases so completely feminine in their external features could be converted by any plastic surgeon into anything resembling a male.

Mr. Wyllie said that he would not bring up a male child as a female, even if it was a male intersex.

Mr. Stephens (Melbourne) said that Mr. Wakefield was critical of previous operators, and that many different operations had been described. Also, Mr. Stephens thought that there was not a good enough follow-up investigation of the operation with the Denis Browne technique. He suggested that each surgeon should bring along his personal series with his special technique and see the follow-up results. He was not satisfied with the Denis Browne technique, but that was probably due to technical faults. The problem was spread over a number of surgeons, each one seeing relatively few cases. Important points, he suggested, were: (i) that urinary diversion was complete for two weeks; (ii) that in trying to advance the skin to the end of the penis there was likely to be tension imposed on the apical part of the flap, which would make the orifice recede to the frenular part of the glans.

ERIC GOULSTON (Sydney) asked at what age Mr. Fraser performed the two stages.

Mr. Fraser replied that he thought that chordee should be corrected as soon as the penis was big enough and that the second stage should be done at the age of five or six years.

D. DEY (Sydney) inquired about hair growth on the reconstructed urethra.

Mr. Fraser replied that the preputial skin was used as a flap to the ventral surface of the penis. A good push back of the urethral orifice was obtained by the use of non-hair-bearing skin for the Duplay flap. Inspection of a normal penis showed hair on the ventral surface of the penis, similar to what obtained in the repair with scrotal skin used to cover the artificial urethra.

Severe Neonatal Viral Infections.

JOHN COLEBATCH (Melbourne) presented a paper entitled "Clinical Observations in Severe Neonatal Viral Infections". The subject was introduced with some generalizations regarding viral infections in the fœtus and in the newborn and a list of such infections known to occur.

Dr. Colebatch then described some clinical observations on four serious viral infections in that age period—infective hepatitis, generalized cytomegalic inclusion disease, herpes simplex viræmia and viral (Coxsackie) myocarditis. Stress was laid on the generalized nature of the pathological lesions, and hence of the clinical picture, particularly in the last three of those infections.

In conclusion, Dr. Colebatch emphasized that such neonatal infections had often been contracted *in utero*, that their clinical onset was usually insidious, that accurate diagnosis during life was frequently possible with modern methods, that non-specific therapy could be of considerable value, and that prophylaxis was of vital importance for the highly susceptible infants in that age period.

CLIFTON WALKER (Sydney) mentioned a case of an infant with hepatomegaly, splenomegaly, jaundice and a rash, in whom the cytomegalic inclusion bodies were sought in the urine twice without success. The child was alive at six months, but mentally retarded.

In reply to Dr. Clifton Walker, Dr. Colebatch said that the diagnosis might seem to be excluded by the urinary examination, but as only 88% of cases showed a renal lesion at autopsy there must be 12% of cases with a negative result of urinary examination.

A Syndrome Associated with Maldevelopment of the Cartilage in the Bronchial Tree.

HOWARD WILLIAMS presented five patients with maldevelopment of the cartilage of the bronchial tree. He said that the symptoms commenced in infancy in all patients. The principal clinical features were chronic cough after a respiratory infection and wheezy breathing, which was usually mistaken for asthma. Cyanosis and severe respiratory embarrassment occurred in four of the five patients. The children were all smaller than normal, had an inspiratory and expiratory wheeze, a deformed chest from emphysema and numerous fine crepitations over the entire lung fields. In those patients, purulent sputum was seen in the mouth after a coughing episode. Cyanosis occurred in four patients, two of whom died.

Dr. Williams said that, radiologically, the lung fields appeared emphysematous, while the hilar shadows and vascular markings were prominent. Bronchoscopic examination showed a normal larynx, trachea, right and left bronchi and major divisions, but purulent secretion was observed coming from all lobar openings. Bronchographically, the picture was a remarkable one, especially when viewed under the screen. The bronchi from the second segmental division down to the eighth to tenth divisions were seen to expand and contract during inspiration and expiration like a series of small elongated balloons which were being partially inflated and deflated. In only a few areas fine bronchiolar branches were traced. Even after twenty-four to forty-eight hours the radio-opaque oil was still seen in these abnormal bronchi, and no filling of the peripheral bronchiolar tree or alveoli had occurred.

Dr. Williams said that one of the two patients who died was examined *post mortem* by Dr. Alan Williams, who found that all the bronchi from the second to the eighth or tenth division of each segmental bronchus were dilated, soft to palpation and easily occluded with light pressure, and felt as if cartilage was completely absent. Histological preparations of serial secretions showed that there were small plaques of apparently normal cartilage, but the amount was greatly reduced when compared with that of a normal control patient. The elastic tissue was also reduced, especially that in the submucosa. There were mild subacute inflammatory changes in the mucosa and submucosa. The peripheral bronchiolar tree showed a widespread bronchiolitis, with complete obliteration of the lumen of some of the bronchioles by inflammatory changes. Many of the alveoli showed extensive emphysema, and many of the arterioles showed considerable hypertrophy. These morbid changes appeared to be caused by a primary deficiency of the cartilage of the bronchial tree and secondary infection predominantly in the bronchiolar tree with obliteration of many bronchioles, extensive emphysema and pulmonary hypertension.

Dr. Williams said that the course of the disease was variable. Two patients had died, one aged two and a half years, the other aged four years, the disease having been present clinically for one and three and a half years respectively. Both of these patients had pulmonary hypertension as judged by clinical, radiological and electrocardiographic evidence. In one of these patients the diagnosis of pulmonary hypertension was fully confirmed by cardiac catheterization.

Of the three patients who were alive, one was 12 years of age and had had the disorder clinically for nine years, while the others were nine years and four years, the disease having been manifest for five years and two and a half years respectively. All three patients had chronic cough and intermittent or continuous wheezing and were subject to exacerbations of fever and malaise, during which the cough and wheeze were more pronounced. These patients were all limited in respiratory function. Any running produced marked dyspnœa. In one patient a forced ventilatory spirogram showed a physiological defect identical to that shown in a patient with chronic asthma.

Dr. Williams considered that treatment should be directed primarily to control bronchial and bronchiolar infection and also to clear the bronchial tree of exudate. Antibiotics were given empirically, as culture of the sputum on most occasions did not yield a pathogenic organism. One of the tetracycline group of drugs in a dose of 15 milligrammes per kilogram of body weight per twenty-four hours given over three to four weeks had proved of benefit. Postural coughing three or four times daily had greatly helped to keep the bronchial tree clear of secretion.

A. WILLIAMS (Melbourne) said that he was not quite satisfied with the investigation of the pathology up to the present time, and that he thought that more extensive examination was needed. There was a striking softness, he had found, of the affected bronchial branches on palpation. The bronchi were quite soft, but initial section showed cartilage, so quantitative examination was necessary. There was obviously less on serial section through the whole wall of the bronchus and its branches. There was no evidence of cartilage destruction, and, on staining and histochemical testing, that cartilage present was normal.

T. Y. NELSON (Sydney) said that he was interested in the subject from several points of view. First, the extraordinary bronchographic appearance. He believed that it might be necessary to revise the indications for bronchography and that that need had been recognized in a different form. Dr. Nelson said that at the Royal Alexandra Hospital for Children it had been observed that there was a localized abnormality which, if unrelieved, led to lobar emphysema and possibly death. Secondly, Dr. Nelson was surprised at the length of time of survival. The first child he had seen died within forty-eight hours. He thought that there must be all grades of severity of the syndrome.

In reply to Dr. Nelson, Dr. Williams stated that the localized defect syndrome was well recognized. In congenital cystic disease of the lungs the bronchogram might show a localized area in which bronchi had a similar appearance—probably those were all grades of the one process. The clinical import was that it was easily confused with asthma and infection, or with fibrocystic disease of the pancreas.

STANLEY WILLIAMS (Melbourne) asked what was the bacteriology of the affected lung.

In reply, Dr. Howard Williams said that it was the same as in any chronic, suppurative lung disease, excluding fibrocystic disease.

DOUGLAS COHEN (Sydney) congratulated Dr. Williams on his description of the new syndrome. He did not emphasize that the end was death from pulmonary hypertension. He would probably agree that the slide showed hypertension.

Dr. Cohen made the following inquiries: (i) whether any cardiac catheterization had been done, remembering that one should use more selective methods; (ii) whether, in bronchography in children, screening should be performed routinely or only in selected cases; (iii) whether the syndrome was always a general disease or whether it might be seen in lobar distribution; (iv) whether therapy consisted of long-continued chemotherapy *plus* breathing exercises.

Dr. Williams replied that: (i) the heart of one patient had been catheterized, the cyanosed boy who had shown marked pulmonary hypertension; (ii) in bronchography, screening should be performed in any unusual case, but not with routine ones; (iii) he had seen one apparent case of localized disease, but was not quite certain of the diagnosis; (iv) the treatment was on the lines of that for general suppurative lung disease, (*a*) clearing the bronchi with postural coughing and (*b*) long-continued broad spectrum antibiotics given in small dosage.

The Movements of the Soft Palate and Pharyngeal Walls in Speech.

DAVID L. DEY (Sydney) read a paper entitled "The Movements of the Soft Palate and Pharyngeal Walls in Speech". He said that some years ago his interest had been aroused by an article written by James Calnan,[1] in which he described the palatal movements seen directly in a patient who had undergone an extensive resection of his face for carcinoma. Dr. Dey found Calnan's description of immense interest, differing a good deal from what he had learnt previously. Calnan described the movements as consisting of, first, the formation of a mound (mostly of mucosa) on the upper surface of the soft palate in its middle third, and secondly a sideways narrowing of the nasopharynx. Of particular interest to Dr. Dey was the statement that no forward movement of the posterior pharyngeal wall occurred in ordinary speech, and further that closure was effected at a high level in relation to the posterior slope of the mound.

Dr. Dey said that recently a patient came under his care who had a basal cell carcinoma of the lower part of his septum, recurrent after extensive radiotherapy and invading the anterior hard palate. A very extensive removal of his entire nose, most of the septum, and his anterior palate and alveolus was performed. Since the completion of healing he had been comfortable wearing a prosthesis to close his palate, supported on a plaster headcap, and with it in position speech was virtually normal. At the same time it was possible to observe the upper surface of the palate during speech, while through the relatively transparent prosthesis the tongue movements might be seen indistinctly. (Two colour slides of the patient were then shown.)

Dr. Dey's observations largely paralleled those of Calnan, in that at the commencement of speech the whole upper surface of the soft palate rose up in the form of a hillock. This elevation was a most spectacular affair, as the palate sprang into sight, rising a distance of about three-quarters

[1] *Brit. J. Plast. Surg.*, 1953, 5: 286.

of an inch. The elevation was sustained throughout speech, at the conclusion of which it sank rapidly down again. Dr. Dey thought that it was very noteworthy, first, that there was absolutely no movement of the posterior wall, specifically in a forward direction; secondly, that the levator palati played a most important part in raising the palate as a whole and could be seen to ridge from the lateral pharyngeal wall as it performed this function. Incidentally, that movement narrowed the suprapalatal space from side to side. It was apparent that the salpingo-pharyngeus also took part in the general upward and inward movement of the lateral pharyngeal walls. During speech, as described above, the hillock remained elevated, but could be seen to rise and fall as a whole with articulation. That movement was relatively slow and easily followed, in contrast with the rapid tongue movement. It was very evident that all movement was up and down, the action of the soft palate resembling that of a plug in a hole, there being no element of sphincteric action around the isthmus that Dr. Dey could see. It was important that gagging was quite different.

Dr. Dey thought that those observations seemed to demand considerable revision of thoughts about the desiderata after palatal repair. He was of the opinion that one should not aim specifically at a long palate (which had been regarded as necessary to allow the palate to reach the posterior pharyngeal wall by a hinge-like action based on the posterior edge of the hard palate) so much as at a palate which was loose from side to side. Such looseness would allow the bunching necessary for the hillock to appear as a result of the action of the intrinsic muscles, and would further allow it to be drawn upwards by the action of the levators to plug off the nasopharynx.

Dr. Dey said that it had long been his observation that a long palate was not necessarily a feature in patients who spoke well after repair of a cleft, but that a loose palate which rose abruptly on phonation was always present. It was recommended that future operations should be planned with that in mind.

K. B. FRASER (Brisbane) thanked the speaker for a very interesting paper, as it was very rare, he said, to be able to see those movements. He said that the front view was most illuminating.

One point raised concerned Passavant's ridge. It had been considered to play a part in speech, but was shown to be concerned only with gagging and vomiting. That clarified the puzzling feature of the variation in speech function in palate cases. They knew that that was often due to the mentality of the child and mother, but it was obvious now that mobility was the most important factor. A long, unscarred palate, he said, might give more length for rucking up, to which Dr. Dey had referred. Dr. Fraser said that he thought that Dr. Dey's disclosures stressed the importance of removing hamuli at the base, rather than fracture, thus allowing the tensor palati to pull up and back and to act as synergists in the closure of the palate in the way demonstrated.

The Deformity of Talipes Equino-Varus.

DAVID SCHLICHT (Melbourne) read a paper entitled "The Ætiological and Structural Factors Involved in the Deformity of Talipes Equino-Varus". He stated that the paper was based on a study of 76 patients, and on four anatomical dissections of feet severely affected by talipes equino-varus.

In discussing the ætiological factors he found that a genetic factor was present in only eight out of a total of 44 patients investigated. The genetic factor in that series was not considered, therefore, to play a significant role in the production of those deformities.

Mr. Schlicht next considered moulding *in utero* as a causative factor. Out of a total of 54 mothers of affected children, 16 gave a history suggestive of increased pressure *in utero*. Excessive moulding therefore played a larger part than heredity in the production of talipes equino-varus in the series under consideration.

Mr. Schlicht then discussed the anatomical findings. The bones of the foot showed the important abnormalities. Slides were used to illustrate the following in the four anatomical dissections of feet severely affected by talipes equino-varus: (i) The head and neck of the talus were displaced medially. (ii) The articular facet on the upper surface of the body of the talus was developed only over its posterior half as a result of the equinus deformity. (iii) The articular facet for the navicular on the head of the talus was displaced medially and backwards to accommodate the medial and backward displacement of the navicular. (iv) The articular facet on the under surface of the body of the talus was distorted. That, combined with the distortion of the articular facets on the upper surface of the calcaneus, resulted in interference with the subtaloid articulation and contributed to the varus deformity of the heel. The curvature of the long axis of the calcaneus (concave inwards, convex outwards) also produced a turning in of the heel. (v) The transverse axis of the navicular was more curved than normal, with its increased convexity directed anteriorly. (vi) The total effect of the three deformed bones was to produce a bunching up of the inner side of the foot (that is, concavity, with varus deformity of the forefoot), a partial dislocation of the calcaneo-cuboid joint, with a resultant convexity of the outer side of the foot, and a turning inwards of the heel.

Mr. Schlicht found that, apart from the thinness of the calf due to diminution in the size of the muscles of the posterior compartment of the lower leg, there were no significant abnormalities of the soft tissues in those specimens. He considered that the consistent presence of osseous deformities at birth in severe cases of talipes equino-varus emphasized the paramount importance of manipulative correction within the first forty-eight hours of life.

N. MYERS (Melbourne) asked if there were any significant changes in the insertion of the tendo achillis in talipes equino-varus.

Mr. Schlicht replied that Stewart stated that the bulk of fibres of insertion of the tendo achillis were inserted into the medial side of the posterior surface of the calcaneus. He had advocated transposition of the medial half of the insertion laterally as a cure for varus deformity. Mr. Schlicht had found it equally distributed over the posterior surface, and in three cases the above-mentioned operation had given disappointing results.

M. S. SCHREIBER (Sydney) asked Dr. Schlicht to discuss the relationship between meningomyelocele and talipes, as those were frequently associated.

Mr. Schlicht replied that he thought that the spinal cord abnormality was directly responsible for the deformity. The grade of talipes was always a more severe one and treatment was difficult.

D. MACKAY (Adelaide) asked whether any cases of talipes equino-varus associated with myelomeningocele were dissected, and if so whether the findings were the same as for non-paralytic talipes.

Mr. Schlicht replied that one group of rachischisis was dissected and the findings were similar to those outlined in the paper. No microscopic sections of specimens were obtained for technical reasons. They would be important.

D. DEY (Sydney) said that the evidence presented had given him the impression that there was an inborn developmental abnormality of bone and that such other factors as moulding by outside pressure were discounted.

Mr. Schlicht replied that he did not hold that the bones were initially responsible. The main causes, he believed, were a combination of the genetic and moulding factors, and that the bones were an expression of that influence rather than the initiating factor.

FELIX ARDEN (Brisbane) asked if any dissection had been performed after successful treatment.

Mr. Schlicht replied that no opportunity had arisen, but that he would very much like to see one. Skiagrams did not give a complete answer.

R. H. CRISP (Perth) asked if any microscopic examination of the muscles had been made by Mr. Schlicht.

In reply, Mr. Schlicht said that he had not made any dissections, but that other workers had shown fibre degeneration and death.

F. D. STEPHENS (Melbourne) said that the paper emphasized two features—bony changes and dislocations. Manipulation reduced the dislocation, but bony changes were improved only by retention of the corrected position over a period of at least a year.

The Role of Testicular Angiography and Division of the Testicular Vessels in the Salvage of High Undescended Testes.

R. FOWLER, JUNIOR (Melbourne), read a paper entitled "The Role of Testicular Angiography and Division of the Testicular Vessels in the Salvage of High Undescended Testes", in which he described a method by which a very high undescended testis might be brought down into the scrotum. The method was applicable to the not uncommon undescended testis, in which the vas deferens and its accompanying vessels were of considerably greater length than the spermatic vessels, which tethered it at a high level. In the paper he described the blood supply of the undescended testis, the effect of interruption of the spermatic artery on the viability of the testis, and the technique of the operation.

Mr. Fowler said that Harrison[1] had demonstrated that the blood supply of the normal testis was derived from three sources—the spermatic artery, the artery of the vas, and the cremasteric vessels. Those vessels freely intercommunicated in and around the testis. He showed, too, that the arterial supply of the testis entered from the vessels on the surface of the tunica and not from the hilum. This was an important observation which had direct bearing on the surgical technique of the operation described in the paper. By angiography in the living child, those vessels and their anastomoses were demonstrable in the undescended testis. The technique was somewhat time-consuming and was found to be impracticable as a routine investigation. However, the study showed conclusively that there was a free anastomosis between the spermatic and the vasal vessels, that the artery of the vas could supply the testis adequately when the spermatic vessels were clamped, and led to the routine adoption of certain "bleeding tests".

Mr. Fowler said that the bleeding tests were simple, practicable, and could be used to confirm the presence of adequate blood supply to the testis when the spermatic vessel was occluded. At operation, the spermatic vessels were temporarily compressed by a light bulldog clamp at a point approximately two centimetres above the internal ring, where so often the high undescended testis lay. The presence of an adequate anastomotic supply was then assessed by making a small incision in the tunica of the testis and observing the bleeding from the cut edges. Bright arterial bleeding observed for several minutes—a positive result—indicated the presence of an adequate testicular supply.

The second test was confirmatory and was done as follows. The spermatic vessels were divided approximately two centimetres above the internal ring. The proximal end was ligated, and the distal cut end of those vessels allowed to bleed. The presence of an adequate collateral circulation to the testis was confirmed if bright blood continued to bleed from the unclamped vessel for more than two minutes.

The third test was required only if it was necessary to divide any other cross-communicating channels between spermatic and vasal vessels in the cord. The first step was to occlude the cross channel with a light bulldog clamp whilst the cut spermatic vessel was still untied. If, in spite of the occlusion of the collateral vessel, the bleeding continued, it was inferred that division of that anastomotic channel would not impair the blood supply to the testis.

Mr. Fowler went on to say that in the study 12 testes could not be brought into the scrotum until after division of the testicular vessels. Ten of those were located higher than the external ring and two at or below the ring. In 11 testes the vas deferens and its accompanying vessels ran a long recurrent course, passing out through the external ring and beyond before reentering to join the testis at the level of the internal ring. In the twelfth child, the vas, vasal vessels and spermatic vessels were short. Eleven of those testes had been observed post-operatively for periods varying from two months to two years. Eight testes were regarded as clinically satisfactory on the basis of size and site. The ninth testis was initially hypoplastic and was palpable as a small though similar sized nodule high in the scrotum. The tenth testis was of smaller size than its fellow and was high in the scrotum, though biopsy showed surviving testicular tissue. The eleventh testis had atrophied. In that child, both the vas and spermatic vessels were short and efforts to lengthen the cord were too radical. The operation was performed prior to the development of the bleeding tests. That type of undescended testis was considered to be totally unsuitable to the operative technique described in this paper. The condition of the twelfth testis had not as yet been assessed.

There were special features regarding the operative technique. Mr. Fowler recommended: (i) that the technique be used only for those children in whom the testis was of reasonable size and was accompanied by a "long-loop" vas; (ii) that the blood vessels be clearly identified at the point of convergence on the undescended testis and in the loop of the elongated vas beyond the testis, with the assistance of transillumination when necessary, before the two main supply vessels were separated to allow the testis to rotate caudally on the straightened vas; (iii) that the bleeding tests be used as the guide to the efficiency of the collateral circulation; (iv) that the technique be performed as a premeditated procedure and not as a last resort after other means of "freeing" the cord had been performed.

Mr. Fowler came to the following conclusions: (i) The blood supply to the undescended testis was derived from the same vessels as the normal testis. (ii) the undescended testis remained viable after high division of the internal spermatic vessels. (iii) High ligation of the internal spermatic vessels enabled that type of undescended testis with the redundant loop of vas deferens to be brought down into the scrotum.

[1] *J. Anat.*, 1948, 82: 267 (July).

Electrolyte Disturbances in Children with Artificial Bladders.

J. E. McCOY read a paper entitled "Electrolyte Disturbances in Children with Artificial Bladders". (This paper has not been made available for publication.)

J. GIBSON (Sydney) thanked Dr. McCoy and agreed that the solution was probably a surgical one. He thought that reabsorption of the electrolytes was the difficulty. He said that at the Royal Alexandra Hospital for Children the ureter had been transplanted to the isolated rectum in a modified Lowsley's technique. That meant that there was no fæcal mixing, no reabsorption of electrolytes and a reduced risk of infection. In the second of two cases thus treated the electrolytes and blood urea were normal and culture of the urine was sterile after three months. Control of urine was possible for as long as one and a half hours, leaving only one drachm of residual urine. Dr. Gibson thought that the operation had some prospects and might overcome the hyperchloræmic acidosis and be preferable to the ileal conduit.

T. G. MADDISON (Melbourne) asked Dr. McCoy how many cases of idiopathic renal acidosis had been seen in that time.

Dr. McCoy replied that two proven cases had been seen in that period.

H. E. WILLIAMS (Melbourne) added that two gross cases and three of milder degree had been seen.

K. CAMPBELL (Melbourne) commented that irradiation of the bowel had prevented electrolyte reabsorption.

Dr. McCoy agreed that that was so, but thought that infection from fæcal mixing would still be a problem.

M. L. POWELL (Melbourne) asked the length of life which could be expected in those patients.

Dr. McCoy replied that, from the literature, until recently it was unusual for such patients to survive childhood. The patient aged 38 years described earlier was therefore an exception.

K. B. FRASER (Brisbane) said that he had one patient, aged 42 years, who had had the usual type of Coffey operation. He had some degree of hydronephrosis, but was carrying on a normal life.

H. E. WILLIAMS (Melbourne) asked Dr. McCoy whether or not the children with more severe renal damage were those with the more severe electrolyte disturbance.

Dr. McCoy replied that those patients with an abnormal intravenous pyelogram or recurring pyelonephritis were those with the worst disturbance.

British Medical Association.

OPHTHALMOLOGICAL SOCIETY OF AUSTRALIA (B.M.A.).

THE eighteenth annual general and scientific meeting of the Ophthalmological Society of Australia (B.M.A.) was held in Adelaide from October 20 to 24, 1958, MR. M. SCHNEIDER, the President, in the chair. The meeting was officially opened by the Honourable Mellis Napier, K.C.M.G., Chief Justice of South Australia, at the University of Adelaide. In his presidential address, Mr. Schneider discussed ophthalmology in the ancient civilizations.

Guest speakers included Mr. B. W. Rycroft (London), Professor A. A. Abbie (Adelaide) and Professor P. Bishop (Sydney). Mr. Rycroft read papers on plastic surgery, ptosis surgery and keratoplasty, which were received with appreciation and provoked much discussion. Professor Bishop read an informative paper entitled "The Physiology of the Optic Pathway".

Two symposia were held at the meeting. One was on the lachrymal sac and its surgery, the speakers being Mr. Rycroft, Professor Abbie and Mr. Edward Ryan (Melbourne). The other was on asepsis in ophthalmology, and the speakers were Mr. D. Crompton (Adelaide), Mr. Hugh Ryan (Melbourne) and Dr. K. Anderson (Adelaide).

Dr. C. H. Greer (Melbourne) read a sound and instructive paper on the pathology of pseudoglioma.

Mr. B. Hamilton (Hobart) read a paper entitled "The Eyes and Scurvy", in which he drew attention to a disease that is often overlooked.

Mr. A. Lamb (Perth), in his paper "Perforating Injuries", refuted the oft-repeated statement that predictions as to the onset of sympathetic ophthalmia can be made from examination of the monocytes.

Mr. J. Kingsley (Sydney) read a timely paper on "Television as a Visual Task". Other interesting papers were presented by Mr. L. Stokoe (Adelaide), Mr. F. Phillips (Hobart), Mr. D. Crompton, Mr. B. A. Rogers (Sydney), Mr. G. Serpell (Melbourne), Mr. R. F. Lowe (Melbourne) and Mr. A. A. Tye (Adelaide).

The officers of the Society are: *President*, Mr. J. L. R. Carter (Launceston); *Vice-President*, Mr. J. A. Pockley (Sydney); *Honorary Treasurer*, Mr. A. E. F. Chaffer (Sydney); *Honorary Secretary*, Mr. P. A. Rogers; *Immediate Past President*, Mr. M. Schneider (Adelaide).

The nineteenth annual general and scientific meeting of the Society will be held at Hobart from November 9 to 13, 1959. It is expected that overseas visitors will include Edmund B. Spaeth (Philadelphia), Dohrmann Pischel (San Francisco) and Willoughby Cashell (London).

Special Correspondence.

LONDON LETTER.

BY OUR SPECIAL CORRESPONDENT.

The Nation's Health.

IN the latest survey of the health of the people (1957), Sir John Charles, Chief Medical Officer of the Ministry of Health, draws attention to the increasing operation of modern scientific developments which have their effect on the nation's health, particularly the potential risks of the peaceful uses of atomic energy. The accident at the Windscale nuclear reactor in Cumberland a year ago caused much public uneasiness, though no serious damage to the community occurred.

The Report contains information on many subjects, of which a few may be mentioned.

Birth and Death.

In 1957 the estimated population of England and Wales was 44,970,000, an increase of 240,000 over the year before. More babies were born in 1957 than in any year since 1949. The expectation of life today is 69 years for males and 74 for females. The main causes of death were diseases of the circulatory system (36·6%), cancer (18·3%), vascular diseases (14·3%) and respiratory diseases (11·9%). Maternal mortality continued to fall, although the rate is still higher than in several other countries. The mortality of infants still declines, but other countries, including Australia and New Zealand, have lower ratios.

Infectious Diseases.

Smallpox.—After three years' freedom from smallpox, four cases occurred in the London area in 1957, with two deaths. Smallpox is no longer endemic in Europe, and the chances of the stay-at-home Englishman contracting it are remote. In the public mind vaccination does not appear so important; hence the low acceptance rate (43%) in the case of newborn infants.

Diphtheria.—With its continuing low incidence, diphtheria has ceased to be a cause of anxiety as far as the public health is concerned, but it will continue to be so only as long as the immunization of infants is practised on a sufficiently large scale. As with smallpox vaccination, there is less public response to immunization, the 1957 diphtheria immunization index for children under five years of age being 53·4%.

Scarlet Fever and Streptococcal Infections.—For the first time, the number of notifications of scarlet fever and streptococcal infections fell below 30,000 in England and Wales.

Measles.—Measles continues to show a high incidence but a low level of deaths.

Whooping-Cough.—Notifications of cases of whooping-cough have remained at about the same level for the past three years, with a low mortality rate. Vaccination against whooping-cough can be obtained through the local health authorities, and it is suggested that children should be immunized by the third month owing to its serious effects in early life.

Influenza.—In common with most countries, influenza, caused by a new variant of influenza virus A, reached pandemic proportions in 1957. The number of deaths was, however, vastly lower (6716) than in the great pandemic of 1918.

Poliomyelitis.—The incidence of poliomyelitis was not unduly high in 1957 (4860 notifications) compared with the epidemic years of 1947 and 1950. Deaths were 5·3 for 100 notifications. The disease was more severe and fatal in adults and pregnant women. The vaccination programme against poliomyelitis has been carried out on an unprecendented scale; six million persons have received vaccination to date, mainly in the young age groups, but it is now to be extended to adults and expectant mothers. Supplies of vaccine are now adequate, helped by the importation of Salk vaccine from the United States.

Enteric Fever.—Enteric fever is no longer a public health problem in this country. The number of cases reported annually is under 200. In nearly one-fifth of the 1957 cases those concerned were infected abroad—a hazard of the increasing popularity of Continental holidays. The number of cases of food poisoning was fewer, and it is possible that, at last, some decline in the high incidence of food poisoning is occurring.

Tetanus.—Tetanus was responsible for 28 deaths. Its incidence is not known, as it is not a notifiable disease, but the death rate has declined over the past 10 years. New methods of treatment of patients with serious tetanus, using muscle relaxant drugs, chemotherapy and positive pressure artificial respiration, have undoubtedly saved many lives.

Venereal Disease.—The number of patients with syphilis attending clinics (both early and late cases) fell appreciably for the first time. Many latent cases were brought to light by routine blood tests at ante-natal clinics, which would suggest that this routine blood examination should continue on a wider scale than at present. By contrast, there was a steep rise in the number of new cases of gonorrhœa in both sexes. The rise is undoubtedly connected with a widespread misplaced faith in the "one-shot" treatment. It is now apparent that penicillin, effective as it has been, cannot by itself make a lasting impression on the incidence of the disease. In some districts, strains of gonococci, more or less resistant to penicillin, are in circulation.

Tuberculosis.—The fall in the death rate for tuberculosis continues. Compared with five years ago, the fall in deaths from all forms of tuberculosis was 46%. In many sanatoria, beds made available by the fall in cases of tuberculosis have been used for the treatment of other chest diseases, especially chronic bronchitis.

Rheumatic Disease.

Deaths from rheumatic fever show a steady annual decline, but the chief problem is that of chronic rheumatic disorders, rheumatoid arthritis and osteoarthritis. Considerable research into causation continues in laboratories and hospitals, and by means of field surveys; the last-mentioned method of investigation is being more fully developed in this country than elsewhere.

Cancer.

In 1957 mortality from lung cancer continued its upward trend, and there is no reason to suppose that the peak has yet been reached. There are many unknown factors in the causation of cancer in man; but when the evidence is overwhelming, as in the relationship of excessive smoking to cancer of the lung, its validity can be accepted. In general, it is emphasized that more lives could be saved, or at least prolonged, if treatment could be commenced at an earlier stage in the disease.

Home Accidents.

Much needs to be done in the prevention of accidents in the home. More than 6000 persons die each year in England and Wales (600 deaths occur from burning accidents), and it is estimated that not fewer than 50,000 persons need hospital treatment every year for burns and scalds caused by domestic appliances. This represents a considerable amount of avoidable human suffering, mostly to young children and

old persons. Carelessness, apathy and lack of knowledge are the causes of most home accidents. Publicity and education play a part in the drive to reduce them, as well as the improvement in design of domestic appliances, especially fires. Work by the British Standards Institution has shown that virtually all fabrics in common use for clothing are inflammable within fairly narrow limits, but impregnated fabrics, which are flame-resistant, are now becoming available, although their cost is necessarily higher.

Dental Health.

It is a sad fact that a large number of people visit the dentist only under the spur of toothache, but there are encouraging signs that greater attention is beginning to be paid to the conservation of teeth. The proportion of persons under 21 years of age undergoing conservative treatment in the past eight years has risen from 20% to 40%. It is still unfortunately true that, in over one-fifth of the cases in which full dentures are supplied after multiple extractions, the patient is under 35 years of age. The prevention of dental decay by the fluoridization of water supplies has the full support of the Government and of the dental and medical professions, but the general public is not yet ready to accept this new preventive procedure. Fluoridization demonstrations are being carried out in a number of areas, which may help in the education of public opinion.

Mental Health.

The more humane and tolerant attitude which has grown up both within the mental hospital and in the community has brought a change of emphasis from custody to therapy in the treatment of mental patients. The principle of the "open door" is more commonly accepted, except for those with serious forms of anti-social behaviour. The use of tranquillizing drugs has helped many patients, although there are dangers in their use, both physical and psychical. One aspect of the aging of the population is that 20% of patients admitted to mental hospitals are over 65 years of age; two-thirds are women. The mental hospitals also contain many aged persons who entered hospital in early or middle life and have remained in a fairly stable mental condition for many years. In many cases, discharge to their own homes may be possible after a period of rehabilitation.

New Drugs.

No outstanding advances in drug therapy were made in 1957. There has been much reassessment of various forms of treatment, many of which have failed to live up to their enthusiastic introduction. In the field of antibiotics, very few new preparations meet needs not already covered. The problem is not so much the need for new ones, but the too liberal prescribing of those already available for minor conditions in which spontaneous recovery might be expected, with resultant propagation of drug-resistant organisms.

Hospital Development.

As a result of the improved financial position of the country, government allocations for improvements in the Hospital Service have been doubled, and are expected to be £22,000,000 next year. Six new hospitals have been begun, and ten are in the planning stage. In addition, many improvements to existing hospitals have been approved. Although this progress is necessary and will be continued, it cannot be continued regardless of cost. The Hospital Service is the most expensive part of the National Health Service, and, to quote the Minister of Health: "We cannot isolate any part of our national activity from the economic aspect. Our duty is to aim at the highest common factor of efficiency and provide the best service out of the resources available. Our chief aim is to keep the patient, if possible, out of a hospital altogether. If he has to have a spell in one, to get him out of it as soon as possible. Hence the need to develop out-patient departments, to undertake diagnosis and treatment that would formerly have required admission as an in-patient, and to provide for follow-up care and supervision which enables a patient to go home after a short stay in hospital. In the case of the aged and chronic sick, the aim is to keep them at home as long as possible with the help of the home nursing and welfare services, and if they have to be admitted to hospital for a short stay, to rehabilitate them as soon as possible. In the mental field, the mental hospitals today are concentrating more and more on out-patient work and intensive in-patient treatment."

Correspondence.

SHORT COURSES IN ANÆSTHETICS.

SIR: I notice with dismay the increasing tendency to run short courses in anæsthetics at various hospitals—namely, Royal Newcastle, Lewisham and now Sydney Hospital.

Surely this is a retrograde step, in view of the ready availability of specialist anæsthetists nowadays! It is hard to understand how these courses are conceived by men who have had years of training in their speciality, and who know, for example, the many pitfalls associated with even just one class of agents—namely, the relaxants (Marshall, 1958).

Every time a new resident passes out of his anæsthetic term, I feel that I am unleashing a tiger, and I look forward to the day in this country when anæsthetics are organized on the English system—whether we are salaried or not is immaterial.

Yours, etc.,

REX GRAY.

19 Aldyth Street,
New Lambton,
Newcastle,
N.S.W.
January 18, 1959.

REPORT OF THE N.S.W. BRANCH OF THE BRITISH MEDICAL ASSOCIATION ON MEDICAL EDUCATION, PART I.

SIR: I wish to comment on the above report, and I give my opinions under two headings.

1. Criticism of Certain Views Contained in the B.M.A. Report.

The B.M.A. Committee is to be commended for making its extensive inquiries in Australia and abroad relating to medical education, and the information it has gained is very valuable.

With many of the views expressed by the B.M.A. I am in entire agreement, such as the importance of a medical school being an integral part of a university, and the importance of the pre-clinical departments and the clinical departments of the medical school, and also the university hospital, being closely integrated on the university campus.

I do not agree, however, with the B.M.A. in opposing the establishment of a second medical school in the University of New South Wales.

The B.M.A. report was prepared prior to the change of name to the University of New South Wales, but the B.M.A. says (page 3) that the change of name in no way affects the arguments of the report. The B.M.A. considers (page 14) that the University of New South Wales (formerly N.S.W. University of Technology) corresponds to what is known in other countries as a technical college or an institute of technology, and is distinct from an "academic university". The B.M.A. states (page 14) that "to place a medical faculty anywhere but in an academic university would be to lower its standing, debase its standards and diminish the respect in which the profession of Medicine is held".

The B.M.A. states (page 15) that "much of the teaching and a good deal of research done in professional faculties, such as Engineering and Architecture, could by degrees be transferred to universities of technology. A similar transfer could be made in the case of the Faculties of Veterinary Science and Agriculture to rural sites by raising the status of agricultural colleges, such as the Hawkesbury College, in various parts of the State. This would, incidentally, get rid of some of the overcrowding on the present campus". I feel that if the faculties of engineering, architecture, veterinary science and agriculture were removed from the University of Sydney, that university would be the poorer.

The Murray Committee (page 87, section 314), referring to the invitation by the Government of Victoria to submit a report to it on the establishment of a second university in Victoria, said: ". . . whatever the prime function of a new university, it must be of such a character that it can relieve substantially the pressure, not only on the Faculties of Science, Engineering and Medicine, but also on many of the arts, such as history, English and psychology, and law,

commerce and the social sciences. The association of these disciplines with the sciences and technologies would, we believe, be essential for the intellectual health of the new institution." I believe that these views of the Murray Committee are sound and in keeping with a proper outlook in this second half of the twentieth century. The views of the B.M.A., as set out above, I believe to be unrealistic and out of date.

I share, to some extent, the B.M.A.'s misgivings (page 15) relating to some subjects taught in the University of New South Wales. The Murray Committee expressed similar misgivings. I feel, however, that if the subject is approached with good will, the difficulties can be solved and a wise judgement ultimately be made. In this regard it should be borne in mind that the face of medicine has changed greatly during recent years and is continuing to change. Many individuals without medical degrees now make significant contributions to medicine both in treatment and in research, and this fact, no doubt, is partly responsible for the modern concept of "the greater medicine".

2. Future Attitude of the B.M.A.

The present position is that it has been decided that a medical school is to be established in the University of New South Wales, and that five foundation chairs in anatomy, physiology, pathology, medicine and surgery have been advertised, and these appointments will be made this year. In these circumstances, it is to be hoped that the B.M.A. will refrain from making disparaging statements about the University of New South Wales and its medical school.

No effort should be spared to ensure that highly gifted men are attracted to the foundation chairs and that they are not frustrated after appointment. The success of the second medical school will depend largely on these men.

It is good to know that the second medical school will have the support of the University of Sydney, as is clear from the statement of the Deputy Vice-Chancellor of that University (*Daily Telegraph*, January 7, 1959) that "the sooner the University of New South Wales becomes a general university the better. . . . It should have a Faculty of Medicine and a Faculty of Arts".

It is important that professors in a faculty of medicine should feel that they have the confidence of the medical profession. The B.M.A. Council can give a lead in this direction by extending whole-hearted support to the second medical school, and thus help it to maintain the high standard of medical education in this country.

Yours, etc.,

8 Water Street,
Wahroonga,
N.S.W.
January 16, 1959.

KEITH INGLIS.

SIR: I write to congratulate the N.S.W. Branch Committee on Medical Education on its determined marshalling of fact and opinion. The main conclusions of Part I of the Report are carried beyond dispute. In particular, it is made clear that a new medical school should not cut away from the traditional and evolved methods of the University. Why sever the umbilical cord before birth?

One comment, however, should be given deep second thoughts—that on hospital policy. The Report regrets the erecting of "so many small district hospitals"; these could be converted to "special purpose hospitals, diverting to the teaching hospitals the kind of clinical material they need". Discussion on this point has urgent value. Planning education entails planning health services, for these are shaped by attitudes learnt in training.

Hospitals exist, primarily, to cure the sick. "Cure" relates to an environment. Restoration to a certain social function, and to a certain employment, must be the steady aim of treatment. Big hospitals get bigger, exuberantly obeying Parkinson's Law, and more remote, as the population spreads. Size confers well-known benefits; but we can list reasons why size and distance defeat cure, in this complete sense.

1. Large organizations tend to be preoccupied with their own administrative rituals. Patients are quick to notice that the ward report takes precedence over the bed-pan.

2. Breaking group ties may in itself cause illness. About the very young and the old, this remark is by now platitudinous. What may be forgotten is the extent to which those in between are tribalized—even in a Sydney suburb. A man may enter his local hospital without qualms. In the mammoth institution he is as uneasy as a New Guinea native transported to an alien village.

3. Small hospitals offer some chance of comforting contact with the family medico.

4. Hospital doctoring becomes a cloistered career. Monastic medicine must lose contact with the workaday world. Cicely W. Williams (*Lancet*, April 26, 1958) remarks: "Often the teaching of students is almost entirely divorced from the realities of the circumstances in which the patient became ill." These circumstances are on the doorstep of the neighbourhood hospital.

The thought follows that this same hospital could have teaching functions. Many students are destined for general practice. The general practitioner spends much time grappling with adjustment problems; yet human ecology is neglected both in teaching and research. Regional hospitals could be bases for environmental studies.

I suspect that I have fallen into the error of special pleading. Still, it can hardly be denied that medical education should be designed around the patient's welfare, rather than that the reverse should hold. And it is at least arguable that small general-purpose hospitals should be encouraged.

Yours, etc.,

25 Sloane Street,
Summer Hill,
N.S.W.
January 13, 1959.

P. P. MANZIE.

HAPTOGLOBINS AND HÆMOGLOBINS IN AUSTRALIAN ABORIGINES.

SIR: In his article on "Haptoglobins and Hæmoglobins in Australian Aborigines", Budtz-Olsen (MED. J. AUST., November 22, 1958) comments upon the speculations of Horsfall and Lehmann (1956) concerning malaria and sickle-cell hæmoglobin and hæmoglobin E. These latter authors state that "it is noteworthy that malaria is thought to be a recent importation into the Australian mainland", but give no authority for this statement.

Before speculation is advanced too far, it would be wise to examine this proposed selection pressure in the Australian aboriginal, namely, malaria, and the evidence concerning the time of its arrival in northern Australia. This letter is mainly a discussion of whether or not malaria was introduced by white settlers in this country, as it is presumed that the term "recent importation" refers to historical times. Some of the evidence supporting the thesis that sickle-cell hæmoglobin gives protection against falciparum malaria is derived from the decreased incidence of this gene amongst the Negro population in the United States of America, where these people were exposed to a much lighter challenge from this infection. Negroes were first imported to Florida by the Spaniards in the sixteenth century, and by 1790 (i.e., about the time of the first settlement in Australia) there were about 700,000 Negroes in the United States of America (Gregory, 1925). Thus this change in gene composition of the American Negro population has occurred in a few hundred years following a change in selection pressure. The word "recent", then, may be applied to periods of centuries rather than millennia in discussing this subject.

Cilento and Baldwin (1930) stated that the date of entry of malaria into Australia must remain a matter of speculation only; if malaria did invade the continent in pre-European times it left no known traces. Their conclusion, however, was that malaria probably did not occur amongst the aborigines before the arrival of Europeans, and this was based mainly on the nomadic habit of aborigines. They record Leichhardt's abandoning an attempt to cross Australia from east to west because of ague. This was his second expedition in 1846-1847, when Leichhardt did not proceed much further than Stephen's station on the Condamine River. It is possible that the party was infected by parasites introduced by Europeans to this area.

Ford (1950) states that malaria has evidently existed in North Queensland for many years, but does not discuss its possible occurrence before the arrival of Europeans.

As an appendix to his account of the voyage of the *Rattlesnake*, MacGillivray (1852), naturalist to the expedition, published the journal of Mr. William Carron. Carron was a botanist who accompanied Kennedy's ill-fated exploratory

expedition in the Cape York Peninsula, which landed at Rockingham Bay (midway between the present Cairns and Townsville) in May, 1848. A few days after landing and moving north the party examined a native encampment of 18 to 20 huts, where it is probable that some of their infections were acquired, as 17 days later a carter and a labourer were taken ill with the ague. Carron's journal gives an account of the misfortunes of the rear party left behind by Kennedy, and presents unmistakable evidence of attacks of malaria. Although the majority of this rear party died, it is not necessary to suppose that it was falciparum rather than vivax malaria, as the concomitant starvation with œdema of the legs and great relaxation of the bowels could have contributed to a fatal outcome with vivax infections.

Here, then, is evidence of the presence of malaria in a part of the mainland of Australia which had not been settled by Europeans. Admittedly numerous visits had already been made from the sea in this part of Australia, including the earliest by Captain Cook; but if these brief visits are to be suggested as responsible for the introduction of malaria parasites, it is very much more likely that earlier visitors from a highly malarious country such as Papua would have been responsible for infecting the local anophelines with malaria parasites. It is notable that Breinl (1919) found endemic malaria in the Mourilyan district, which is in the same area as that in which Kennedy's party had acquired the disease.

In discussing the trade relationships of the Australian aboriginal, McCarthy (1939) pointed out that the Torres Strait islanders had close connexion with the Kiwai and Fly River districts of western Papua. The trade was associated with the Melo shell used as a phallocrypt. Some of the Torres Strait islands were noted as being malarious by early explorers and missionaries. These islanders also travelled by canoe to the mainland of Australia, going as far south on the eastern coast of Cape York Peninsula as Princess Charlotte Bay. Visits made by traders such as these are on a much more intimate basis than those made by a ship's party putting ashore for water and sleeping on board, and would be much more likely to result in the introduction of malaria parasites. MacGillivray described cases of ague in the aborigines of Cape York in 1849, a number of years before the white settlement of Somerset was established in Cape York. He commented on the method of treatment of the attack by the local people, which consisted in kneading of the patient's head with the hands of a succession of men. The patient was then placed close to the fire and sprinkled with water "until a copious perspiration broke out, denoting the third and last stage of the attack". This was treatment of a disease with which the people were familiar—it was not a response of fear of the unknown.

As late as 1935 Dowling, writing from Thursday Island, described the constant movement of small craft between Papua, Thursday Island and both coasts of Cape York Peninsula. Some of the Torres Strait islands had been subject to severe epidemic malaria in the previous year.

In regard to the Northern Territory of Australia, the first European settlement, which was established by Captain Bremer at Fort Dundas on Melville Island in 1824, suffered from intermittent fever (Campbell, 1827, 1828) which Ford considered as apparently being malaria, as well as from hostilities with the natives. It is possible that the troops which Captain Bremer embarked at Sydney (Brisbane, 1824) may previously have seen service in a malarious country before being taken to Melville Island. However, as trade relations were established with Timor early in 1825 (McIntosh, 1958), there was soon adequate venue for the entry of malaria parasites to Melville Island, if they had not been there before the establishment of the European settlement.

On the other hand, there had been annual visitors to the northern coasts of Australia in the form of Malays from the malarious Celebes and Timor for many years before the arrival of Captain Bremer. These Malays visited the harbours and river mouths of the coast between the Victoria River in Western Australia and the southern limit of the Gulf of Carpentaria. They would be present each year during the season in which malaria is transmitted in the Northern Territory. They traded with the aborigines, many of whom accompanied the returning fleets to the Malay country, where they stayed throughout the intervening season (Warner, 1937).

Here, then, was a well-established and continually recurring mode of entry for malaria to the Australian mainland, which had been in existence for a long time before the arrival of Europeans in the area.

The subsequent fate of malaria introduced into the mainland of Australia in pre-European times may be assessed to some extent by the progress of importations in more recent times.

Falciparum malaria, although it has caused severe and widespread epidemics in northern Australia, did not appear to be able to establish itself as an endemic disease after the epidemic of the mid-1930's, when the infection spread as far west as Fitzroy Crossing in Western Australia. Epidemics of falciparum have also occurred in North Queensland when parasites have been introduced by miners from New Guinea, and a survey by Breinl and Taylor (1918) revealed 43 people harbouring *Plasmodium falciparum* and 48 *P. vivax* when 657 blood samples from the population of Cairns were examined. In later years the parasite concerned with endemic malaria in Cairns has been *P. vivax*.

Endemic malaria as it occurs at the present time in a restricted area of northern Australia in the western shore of the Gulf of Carpentaria is due only to *P. vivax*. Although measures have been taken against *P. falciparum* during epidemics in the past (e.g., Kirkland, 1939) with some reported success, it appears that epidemiological factors are unfavourable to its permanent establishment.

The nomadic habit of the Australian aboriginal has frequently been quoted as being inimical to the establishment of endemic malaria. This type of existence has not prevented the establishment and continuance of malaria in people of other countries, such as among the nomadic Kurds, who endanger settled areas with infection or reinfection with malaria during their wanderings. Sparse populations did not prevent the epidemic of the 1930's from killing more than 100 aborigines in northern Australia before it died out.

The evidence presented here indicates that malaria was well known to the aboriginal in the north of Australia long before the arrival of Europeans. Epidemic falciparum malaria very likely occurred and vivax malaria was endemic. In addition to this, if the infections tended to die out there were means available for their regular renewal. The amount of malaria present—i.e., the degree of malarial endemicity—in pre-European times cannot be assessed with any degree of accuracy. Conditions have changed since the advent of Europeans; but this is another story and has been discussed elsewhere (Black, 1956).

Yours, etc.,

ROBERT H. BLACK.

School of Public Health and Tropical Medicine,
Sydney,
December 19, 1958.

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THE FUTURE OF THE AUSTRALIAN ABORIGINAL.

SIR: It was most interesting to read Dr. Barrack's recent article, "The Future of the Australian Aboriginal". His comparative review of their history before and after the white settler serves as a valuable and timely basic knowledge for an enlightened approach to this pressing social problem of ours, which is attracting an increasing amount of attention at home and abroad today. However, with all due respect, I wish to challenge some points made in connexion with the present and future management of aborigines.

Citizenship rights. It is generally agreed that integration is the desired goal (officially stated policy of the Commonwealth and State Governments since 1937). Now, although Dr. Barrack deplores the granting of citizenship rights, an increasing body of opinion in Australia is in favour of the immediate granting of civic status as a first step towards this goal. It has been found by the recent (1958) West Australian Special Committee on Native Matters that this change in status has assumed so much importance in the minds of most aborigines that other supplementary efforts to improve their general outlook, such as education, housing and social conditions, have little real chance of success until this is done. It has also often been pointed out before that, according to the United Nations' Declaration of Human Rights, to which Australia is a signatory, citizenship is a birthright and not a privilege.

I suggest that this move would also avoid the appalling apathy induced by existing restrictive legislation making aborigines second-class citizens, and is in fact a prerequisite to the solution of the whole problem with its many facets. The usual objections to the granting of citizenship rights—namely, increasing drunkenness and their "lack of readiness" for it—may be used concerning any group to perpetuate the existing state of affairs, and have really little ground.

There may be a temporary increase in drunkenness; but those natives who wish to drink already do so, and usually are obliged to take inferior liquors. The oft-quoted violence of some alcoholic natives may well be due to release of suppressed resentment at their under-privileged position and spiritually barren existence. All such incidents in any case can quite well be dealt with under existing laws (W.A. Committee Report).

"Lack of readiness" has been used as an argument against social reforms throughout history, from the freeing of slaves and universal education to the enfranchisement of women. Until aborigines are encouraged and assisted to make their own way, adopting our economic and social standards as they go, they may well wait for their freedom forever. This method with all its faults is considered by competent authorities to be infinitely preferable to periods of compulsory segregation and autocratic control, however benevolent. This is especially the case with such an intrinsically non-aggressive person as the aboriginal who, when subject to control, however "kind and firm", tends to lose any desire for independence and may even resist it.

The plight of the sophisticated native in his squalor on the outskirts of white settlements, towns and cities has been mentioned by Dr. Barrack. These people present the most urgent social problem of all aborigines. They require nothing less than concentrated effort and finance on the part of the governments and public—such has been extended to aid migrants and ex-servicemen in critical times—to effect a lasting improvement and integration into the general community.

Time and hopefulness alone will scarcely help, as long as children in increasing numbers are brought up in the confused, hopeless atmosphere of filth and drunkenness which usually prevails in these situations.

It is the considered opinion of the W.A. Special Committee in their excellent report that if these measures were adopted, a significant proportion of aborigines could be integrated within one generation, effecting, of course, a great national saving in moneys spent in amelioration and a healing of the "running sore in the flank of our society".

With special reference to Queensland, whose problems in this question resemble those of Western Australia, an open inquiry by a panel of experts (anthropologists, educationists, sociologists) could probably do much to effect a solution by presenting the Government with a much-needed programme to follow.

Yours, etc.,

765 Samford Road, Grovely, Queensland.
LILLIAN CAMERON, M.B., B.S.

December 22, 1958.

OSTEO-ARTHRITIS AND LUMBO-SACRAL PAIN.

SIR: I have read two very interesting papers in recent issues of this Journal, viz., "The Nature and Treatment of Osteoarthritis" by Mr. C. H. Hembrow (December 20, 1958) and "Another Look at the Problem of Lumbo-Sacral Pain and Sciatica" by Mr. Thomas King (January 3, 1959).

It is more than gratifying to find that Mr. Hembrow takes a broad and comprehensive view of the ætiology and treatment of arthrosis or osteoarthritis. It is my belief that the progress of this disease can be checked if the patient receives adequate treatment at an early date when pains are primarily muscular or ligamentous. This, I am afraid, is a counsel of perfection. Certainly osteoarthritis may be an aging process, but it can also be conditioned by muscular and ligamentous strain and accentuated by emotional and subconscious tension and stress—a fact very little appreciated. There is a point, however, about which I am not quite clear. The author states that the "essential changes in osteoarthritis are painless, . . . X-ray changes have taken many years (at least 10) to appear, but the patient has not noticed pain or other symptoms during that time". In my experience, I very much doubt if this is so. Certainly one often comes across radiologically displayed bony changes which apparently give rise to no symptoms, but I think that the reverse would probably be the rule, especially in dealing with the spine. Also, as Mr. Hembrow implies, when one sees osteophytes I feel that the disease is entering a late phase, and careful questioning usually elicits the information that at some time in the past ten or twenty years the patient has had pain. One other matter, regarding manipulation under anæsthesia. This is often a necessary and useful procedure in all other joints, but in my opinion should not be used on the spine except perhaps on the neck in very rare cases, and then only most cautiously, as in the spine it is a "blind" form of therapy.

Apropos of osteoarthritis, but in reference to the "Current Comment" article in the same issue of the Journal on "Intra-articular Therapy for Rheumatoid Arthritis", I have never been tremendously impressed with hydrocortisone in long-term therapy—i.e., over twelve months. No one would deny that it is most valuable and sometimes dramatic in results, but I have always preferred to use just a few injections of hydrocortisone, followed by a considerable number of "Lipiodol". The latter is old, I know (I have been told that I was the first in Australia to use it about 25 years ago), but it is harmless and, in my experience, most beneficial in the long run.

Mr. Thomas King's address is indicative of much painstaking labour and is most thought-provoking. It would seem to be, and rightly so, a plea for the use of spinal fusion in selected cases of lumbar instability. But it would appear to me that even with some degeneration of one or more disks, a good deal of the instability should naturally be corrected by ligaments and muscles. I may be quite wrong here; but although I have been especially interested in the treatment of backache all my life (I have one myself!) I have seen very few cases which did not respond most favourably to intensive treatment—not more than 10% at the very outside. In over 30 years I have not had to refer more than about a dozen cases for operation, and they were mostly severe disk protrusions. I may mention that practically all my cases are "chronic"—i.e., of from three to forty years' standing.

That pain arises from tension of ligaments (and often muscles) is a theory I have long held, and that a great deal of pain can arise from nervous tension of muscles and ligaments is, I think, not to be denied.

It has always been a hope of mine that physicians—as distinct from orthopædists—might interest themselves more intelligently in the mechanics, psychosomatics and treatment of backache; but it would have to be a whole-time job, and carried out from a much less narrow viewpoint and with broader vision than the present conception. Heaven only

knows that the field is wide enough, and that treatment, with the exception of some surgical procedures necessarily limited to about 5% of cases, is little improved on that of our grandfathers. It takes every kind of treatment to effect improvement or checking of the detrimental process in these backache cases. My own routine is psychosomatic—psychotherapy, moist heat couch (the best type of heat, I think, but time-consuming and expensive), heavy mechanical massage to spinal muscles, vertical traction to several hundred pounds (invaluable, but little understood as yet), manipulation without anæsthetic, muscle relaxants and sedatives, plenty of good food and sleep, and moderate exercise in the sea, if available. It seems a somewhat formidable and rather strenuous procedure for all concerned, but it does produce results. But once again I should like to emphasize that, omitting those cases of gross mechanical disturbance, emotional environment plays a most important part in this backache syndrome.

Yours, etc.,

235 Macquarie Street, E. HASLETT FRAZER.
Sydney,
January 12, 1959.

MUMPS ENCEPHALITIS IN AN ADULT.

SIR: The letter from Howard Wagner (MED. J. AUST., December 9, 1958) prompts me to record my own sordid case history of July last.

At the beginning of the influenza epidemic I developed a mild bilateral parotitis. Being very busy, I remained at work for five days and then had to go to bed. Two days later a left orchitis made itself painfully obvious, and after doing an anæsthetic list balancing on one cheek I again retired to bed. Mild abdominal pain (presumably a pancreatitis) joined hands with the orchitis, to be followed by an excruciatingly severe frontal headache with a fever up to 105·6° F. The bouts of fever would build up, and until sweating occurred my head felt as if it would disrupt.

Visual hallucinations then commenced and could be produced at will with the eyes half-closed. They were in both black and white and "glorious technicolour", most pictures being scenic or figures drawn and painted after the great Italian masters. One bizarre scene was to see myself in a coffin rolling over the roll-top lid from within. I could also easily see myself as if in a large shaving mirror, every hair showing up in my perspiring unshaven face. Most of these visions were quite beautifully drawn, and I thoroughly enjoyed them. This was the moment when I was transferred from home to the infectious disease hospital, and treated with prednisolone, "Largactil" and "Panadol", the "Largactil" relieving my anxiety and the "Panadol" my headache. After three days my hallucinations went, and after three weeks I returned to work—somewhat trembly—but apart from an atrophied left testicle (prednisolone notwithstanding), none the worse.

Subsequent events have shown that sterility is not necessarily a concomitant of atrophy.

Yours, etc.,

3 Davis Street, JOSEPH A. SCANLON.
Woodville South,
Adelaide, South Australia.
January 9, 1959.

Obituary.

EDMUND MACARTHUR SHEPPARD.

WE are indebted to DR. COTTER HARVEY and DR. ERROL MAFFEY for the following account of the career of the late Dr. Edmund Sheppard.

Dr. "Mac" Sheppard performed his rounds and routine duties as Superintendent of the Princess Juliana Hospital-Sanatorium as usual on the morning of October 8, 1958. At luncheon with the nursing staff he was disinclined to eat or to converse, and he did not rise with them from the table. The matron then observed that he was partially paralysed, and he lapsed into unconsciousness almost immediately. A few hours later, and it was all over. Mac had died, as he would have dearly wished, in harness.

Edmund MacArthur Sheppard was born at Ashfield, N.S.W., on April 11, 1896, and he received his early education at a once-famous but now defunct preparatory school near by, Hayfield. He went on to The King's School, where his family link was a strong one. His maternal grandfather, G. F. MacArthur, was one of the first six pupils enrolled at "King's" in 1832, later to become its headmaster. His father, Edmund Hazelwood Sheppard, a leader of the bar until his untimely death from cerebral hæmorrhage, was educated there, as also, of course, was his son in recent years. However, Mac's talent for sport was a factor in his spending his last school year at All Saints', Bathurst, from where he matriculated in 1914.

In 1916 he went into residence in St. Paul's College, then greatly depleted in numbers owing to the war. He duly enlisted and was accepted for the Australian Imperial Force, but was "given leave to complete his medical course", by edict of the dean of the faculty, who was responsible for this ban on all medical students. With the return of normal activities in 1919, Mac was able to give full rein to his sporting prowess, representing the college in football, cricket, tennis and athletics. He really excelled in the first of these, playing Rugby Union for N.S.W. on several occasions. His most notable match was against the returning A.I.F. team in 1919, when, by dogged tackling, he played his opposing winger, who had a tremendous reputation, almost literally "into the ground". Many will recall the classical remark made under the shower after the match by the sorely bruised and battered warrior to his sturdy young opponent. Mac treasured the comment, and particularly the fact that when they met again after a lapse of 35 years, the veteran looked hard at him, and said: "I remember, you . . .!" A few years after graduation, Mac gained the highest distinction, his international cap, playing against the South African Springboks.

Always a tremendous worker of the student-lark fraternity, rising at 4 a.m. and tip-toeing out to another room to avoid waking his student-owl room-mate, Mac did not allow sport to interfere with his career, and he duly graduated in 1920. He did terms of residency at the Royal Prince Alfred Hospital and the Newcastle Hospital before going overseas on a sabbatical year in 1922. On return, he was appointed superintendent of the Newcastle Hospital, then in a formative phase, a position he held for two years before going into private practice in the suburb of Adamstown near by.

Mac was really of too fine a fibre for the rough-and-tumble life of general practitioner in a colliery town. However, life became more balanced and tranquil for him when in 1931 he married Margaret, the daughter of one of the most respected members of our profession, Dr. J. E. V. Barling. A girl with wonderful poise and serenity, she made with Mac a home life of complete happiness, broken only by the four and a quarter years of overseas service and captivity he endured.

Early in his career at Newcastle he became interested in the Australian Army Medical Corps, and in 1934 he was made commanding officer of the 2nd Cavalry Field Ambulance, which appointment he retained until he was seconded to the A.I.F. in 1940. He was then responsible for the formation of the 2/10 Field Ambulance, and it says much for his qualities of leadership that the main bulk of his non-commissioned officers, a number of other ranks, three medical officers and the quartermaster came from one or other of the two militia field ambulances stationed in Newcastle. Another of Lieutenant-Colonel Sheppard's original officers had served with a combatant militia unit and had met him in annual camps. Eventually he took his ambulance to Malaya in August, 1941.

Throughout the period of training and of fighting, Mac set out to do the allotted task with all the strength and energy he possessed, and these were considerable. It was not long after the A.I.F. came to grips with the Japanese at Gemas that all ranks of the 2/10 Field Ambulance became aware that their commanding officer was not afraid of the dangers of actual warfare. Indeed, his visits to forward areas, particularly in the last stages of the fighting on Singapore Island, were often a source of great anxiety to his officers. The welfare of all ranks under his command was always in the forefront of his mind, and the following incident is an example of the lengths to which he would go for the good of his men. At the termination of hostilities, the 2/10 Field Ambulance was at St. Andrew's Cathedral, Singapore, and was given orders to move from there to Changi without transport. In defiance of all orders, Mac sought and had a somewhat unpleasant interview with the commanding Japanese general, but he did receive permission to use one car to convoy one load of his most exhausted personnel the eight or nine miles to the Changi Camp. (It

is recorded that this incident did not amuse headquarters, A.I.F.) For his conduct of the unit during the Malayan campaign he was mentioned in dispatches.

In July, 1942, he left Changi prisoner-of-war camp as Senior Medical Officer, "B" Force, which was sent to Sandakan, British North Borneo. The voyage in *Ubi Maru*, like all journeys conducted under the auspices of the Imperial Japanese Army, was a grim one. During that voyage the quiet cheerfulness and helpfulness of the S.M.O. were an inspiration to all ranks, and these characteristics continued to evoke their admiration and affection throughout the period of captivity. At Sandakan his tireless efforts to improve the primitive sanitation of the camp, and to obtain accommodation, food and drugs for the sick, and better conditions for the force as a whole, displeased the Japanese administration, and early in 1943 he was removed to another camp at Kuching, Sarawak. Shortly after his arrival at Kuching, in the interests of a small group of Australian other ranks attached to the British troops, he volunteered to work in the camp "hospital". Though at a later date there were seven medical officers in the A.I.F. Officers' Compound, Lieutenant-Colonel Sheppard elected to remain at the "hospital", because he considered that his higher rank would bring some small benefit to the Australian patients at a time when the little things of life meant so much to the individual. During the two and a half years which he spent in this place, he was recognized as the most frequently "bashed" person in the camp of over 2000 inhabitants, military and civilian; these episodes he passed off as a joke. For his devotion to duty as a prisoner of war he was again mentioned in dispatches. After his discharge from the army he was transferred to the Reserve of Officers with the rank of colonel, and received the Efficiency Decoration in 1946.

In Newcastle, for many years before the war, Mac was an active member of the St. John Ambulance Association. After the war he was seconded to the Venerable Order of the Hospital of St. John of Jerusalem in Sydney with the rank of District Surgeon, and continued his work with the Order until ill health forced him to give it up. He was made an Officer Brother in 1949.

On his return to civilian life in 1946, Mac realized that he would have to husband his physical resources, already severely taxed by his privations, and he took a position as medical officer in a government department. Here he was not happy, and it was with great relief that he accepted the position in charge of the Princess Juliana Annexe of the Royal North Shore Hospital in 1954, then opening up as a tuberculosis hospital linked to the Thoracic Unit. In his own words: "You've no idea what a joy it is to be helping to look after sick people, who are trying to get well, after years of arguing with well people, trying to persuade you they are sick."

Though this should have been for him a sheltered position, he worked harder than he need have done, taking on his shoulders the personal problems of all his patients, visiting the Sanatorium on week-ends and holidays, and never sparing himself. In the latter part of this period of four and a half years his health was steadily failing; he had several coronary episodes, almost daily anginal pain, some minor pareses—the ordinary man would have "turned it in", but not so Mac. He gave up all social life, retired to bed on arrival home every evening, and carried on. His quiet courage, his philosophical calm and his business-as-usual during-repairs attitude were a source of admiration, of reverence and of inspiration to all those among whom he worked so devotedly right to the end. In this he was greatly helped by his wonderful family, who reflected his own equanimity throughout. To his wife, two daughters, son and sister goes the deepest sympathy of all who knew him. Mac was in every respect a good doctor, a most gallant soldier, and a very loyal and lovable friend.

DR. A. P. DERHAM writes: I first knew Dr. Edmund MacArthur Sheppard after he had joined the 8th Australian Division in July, 1940, as commanding officer of the 2nd/10th Field Ambulance. It was only later that Mac and I became on familiar terms, but I liked and admired him from the beginning.

His ambulance, together with units of the 27th Brigade Group, arrived in Singapore in August, 1941, rejoining the 8th Division, of which I was Assistant Director of Medical Services. They moved later to Jasin Camp near Malacca, where they were stationed on the outbreak of the Japanese war. As the war progressed, they moved steadily southwards. During the short campaign, I used to spend the nights with his unit as often as possible, because it was a "home from home", and I was sure of a poached egg and a cup of coffee.

Mac Sheppard was punctilious in the performance of his duties, at whatever cost or danger to himself, and in any other war or other division he would have received high military honours. As it was, he was twice mentioned in dispatches, and he earned the regard, respect and loyalty of the veterans and all other ranks of his unit. One incident may be quoted: in the confused fighting on the island when his unit came under heavy shell-fire, Colonel Sheppard led a group of his officers and some others in sheltering helpless patients from flying splinters with their own bodies.

His happy personality made his field ambulance a happy unit, and so it remained. Certainly, it did not deserve the dreadful fate which awaited it at Sandakan. I feel that the strain and sorrow of those days in Borneo must have contributed to his death.

In the prison camp we became even closer friends, because formality could be discarded, and I am glad to say that I have been able to visit his home, and renew my friendship with his family. We have kept up a regular correspondence, and I feel his death as a brother. Those who love Mac Sheppard would not have wished him to linger on, and to become a burden to his family.

GORDON ROY WEST.

We are indebted to Dr. E. F. West for the following account of the career of the late Dr. Gordon Roy West.

Gordon Roy West was born on January 22, 1885, the second son of the late William Arthur West, a prominent educationist in South Australia. He received his early education at Prince Alfred College in Adelaide, where he had a distinguished school career, obtaining a government

bursary which qualified him for a science course at the University of Adelaide. At this university he graduated in the degrees of B.Sc. in 1904 and M.B., B.S. in 1908. After his graduation he served as a resident medical officer at the Adelaide Hospital for the usual period of twelve months, and then entered into practice at Kaniva in Victoria.

Roy West was anxious to do post-graduate work, and with this in view he applied for, and was successful in

obtaining, the appointment of Medical Superintendent of the Adelaide Hospital, when this fell vacant in 1915. About this time he enlisted for service in the Australian Imperial Force, but owing to the shortage of medical men, was kept on in his position as Medical Superintendent at the Adelaide Hospital throughout the whole period of World War I until 1919.

During this period his work was extremely arduous, owing to the shortage of young medical graduates who, immediately on their graduation, went into the military forces. He was fortunate in possessing the facility to accomplish a large amount of work with the minimum of fuss and apparent expenditure of energy, a faculty which was to serve him well in later years when he carried on a large practice, particularly through the strenuous years of the second World War.

Upon relinquishing his post of Medical Superintendent at the hospital he entered into practice at Prospect, a northern suburb of Adelaide. He remained in practice here until his retirement in 1950, a period of thirty-one years.

Roy West was an example of the best type of general practitioner. A man of apparently tireless energy, he managed a very large practice and at the same time kept abreast of the advances in medical knowledge. In April, 1950, he was admitted to the membership of The Royal Australasian College of Physicians. He was appointed a Visiting Physician to the Northfield Infectious Diseases Hospital soon after its establishment, and when this hospital was taken over by the South Australian Government in 1940 he was appointed Honorary Consulting Medical Officer and later Honorary Consulting Physician. He also held the position of Medical Officer of Health for the District Council of Prospect and Enfield. In 1950, at the age of 65 years, he retired from active practice, but filled in the next five years with work at the Repatriation Department and later at the Northfield Mental Hospital.

Roy West was indeed the beloved physician, a lovable and selfless man, as can be testified by the many hundreds of patients to whom he rendered inestimable service. In 1910 he married Miss Marie Scott, and there are two sons, Leonard and Robert, and one daughter, Mrs. Kenneth Stokes. Both sons graduated in medicine, Leonard being a physician in practice in England and Robert a physician in Adelaide.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

WEEK-END COURSES FOR GENERAL PRACTITIONERS, MARCH, 1959.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that the following week-end courses for general practitioners will be held during March, 1959.

Week-End Course in Neurology.

The following course in neurology will be held in the Students' Lecture Room, Royal North Shore Hospital, Crows Nest, on Saturday and Sunday, March 14 and 15, under the supervision of Dr. George Selby.

Saturday, March 14: 2 p.m., "Some Thoughts on Hysteria", Dr. Eric Susman; 2.45 p.m., "Migraine Variants", Dr. J. W. Lance; 3.45 p.m., "The Surgical Treatment of Involuntary Movements and Parkinson's Disease" (with a film), Dr. J. M. F. Grant and Dr. G. Selby.

Sunday, March 15: 9.45 a.m., "The Brain-Damaged Child", Dr. Eric Davis; 10.30 a.m., "The Neurological Significance of Diplopia", Dr. L. S. Basser; 11.30 a.m., demonstration of clinical cases; 2 p.m., "The Diagnosis and Treatment of Pain in the Arm and Hand", Dr. W. J. Burke; 2.45 p.m., "Modern Methods in the Investigation of Neuro-Muscular Diseases", Dr. L. R. Rail; 3.45 p.m., "The Diagnosis of Lesions in the Posterior Fossa", Dr. J. L. Allsop; 4.30 p.m., "Lumbar Disk Lesions", Dr. G. K. Vanderfield.

The fee for attendance at this course is £3 3s.

Week-End Course in Electrocardiography.

The following course in electrocardiography will be held in the Maitland Lecture Theatre, Sydney Hospital, on Saturday and Sunday, March 21 and 22, under the supervision of Dr. G. E. Bauer.

Saturday, March 21: 10 a.m., introduction, "Limits of Electrocardiography", Dr. F. L. Ritchie; 10.30 a.m., "Principles of Electrocardiography", Dr. J. G. Richards; 11 a.m., "Electrocardiography in Valvular and Hypertensive Heart Disease", Dr. B. C. Sinclair-Smith; 11.45 a.m., panel discussion, "What's New in Arrhythmias?" (moderator, Dr. G. E. Bauer; speakers, Dr. E. J. Halliday, Dr. J. B. Hickie and Dr. B. R. M. Hurt); 2 p.m., symposium on "Electrocardiography in Ischæmic Heart Disease" (speakers, Dr. Z. Freeman, Dr. J. Raftos and Dr. W. A. Seldon); 3.45 p.m., practical session in electrocardiography.

Sunday, March 22: 10 a.m., "Normal Electrocardiographic Variations Simulating Pathological Patterns", Dr. George V. Hall; 10.30 a.m., "Electrocardiography in Congenital Heart Disease", Dr. H. A. Fleming; 11 a.m., "Electrocardiography in Pulmonary Disease", Dr. H. P. B. Harvey; 11.45 a.m., electrocardiographic quiz session (Dr. G. E. Bauer, Dr. R. B. Blacket, Dr. R. G. Epps and Dr. F. L. Ritchie).

The fee for attendance at this course is £3 3s.

WEEK-END COURSES FOR GENERAL PRACTITIONERS, APRIL, 1959.

Further details will be available shortly concerning the following courses.

Week-End Course in Respiratory Diseases.

A course in respiratory diseases will be held in the Scot Skirving Lecture Theatre and the Page Chest Pavilion, Royal Prince Alfred Hospital, Camperdown, from 1.15 to 5.30 p.m. on Friday, April 10, from 9.30 a.m. to 5 p.m. on Saturday, April 11, and from 9.30 a.m. to 12 noon on Sunday, April 12, under the supervision of Dr. H. Maynard Rennie. Sir Geoffrey Todd, K.C.V.O., O.B.E., Medical Superintendent, King Edward VII Sanatorium, Midhurst, Sussex, Civilian Consultant for Diseases of the Chest, R.A.F., and Honorary Consultant for Pulmonary Tuberculosis to the British Army, will be guest lecturer. The fee for attendance will be £3 3s.

RECENT ADVANCES IN MENTAL DEFICIENCY AND THE CARE OF PHYSICALLY HANDICAPPED CHILDREN.

A course in mental deficiency and the care of physically handicapped children will be held at Newcastle from April 13 to 17, to coincide with the visit of Dr. L. T. Hilliard, Consultant Psychiatrist and Physician Superintendent at the Fountain Hospital, London. The course will be limited to 20 selected candidates, and will include visits to various mental institutions in the area.

METHOD OF ENROLMENT.

Those wishing to attend any of the foregoing courses should make written application, enclosing remittance, to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, at an early date. Telephones: BU 4497-4498.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes etc. are published in the *Commonwealth of Australia Gazette*, No. 1, of January 8, 1959.

NAVAL FORCES OF THE COMMONWEALTH.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Promotion.—Surgeon Lieutenant John Ewart Cawte is promoted to the rank of Surgeon Lieutenant-Commander, dated 17th November, 1958.

Royal Australian Naval Volunteer Reserve.

Transfer to the Retired List.—Surgeon Lieutenant-Commander Ronald MacKenzie MacIntosh, M.B.E.

AUSTRALIAN MILITARY FORCES.

Citizen Military Forces.

Northern Command.

Royal Australian Army Medical Corps (Medical).—The following officers are appointed from the Reserve of Officers and to be Captains (provisionally), 27th October, 1958: Honorary Captains 1/39225 L. S. Parker and 1/55872 A. Ottone.

Southern Command.

Royal Australian Army Medical Corps (Medical).—3/50239 Captain (provisionally) G. R. Warming relinquishes the provisional rank of Captain, 31st August, 1958, is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Southern Command) and is granted the honorary rank of Captain, 1st September, 1958. 3/157156 Captain R. M. Gray relinquishes the temporary rank of Major, 1st October, 1958, and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Southern Command), 2nd October, 1958. To be Captain (provisionally), 12th November, 1958: 3/50275 Keith Basil Layton.

Central Command.

Royal Australian Army Medical Corps (Medical).—The provisional rank of 4/32094 Captain G. M. Chambers is confirmed.

Western Command.

Royal Australian Army Medical Corps (Medical).—To be Captain (provisionally), 12th November, 1958: 5/45068 Trevor Thomas Nicholls.

Tasmania Command.

Royal Australian Army Medical Corps (Medical).—The provisional rank of 6/15206 Captain D. J. Walters is confirmed.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps (Medical).

Southern Command.—Captain E. A. C. Farran is retired, 17th November, 1958.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force.

Medical Branch.

Squadron Leader J. McC. Morrison (036133) is promoted to the rank of Wing Commander.

The following Flight Lieutenants (Acting Squadron Leaders) are promoted to the rank of Squadron Leader: G. S. Radford (025626), W. J. Bishop (0210441).

Medical Practice.

NATIONAL HEALTH ACT, 1953-1958.

THE following notice is published in the *Commonwealth of Australia Gazette*, No. 1, of January 8, 1959.

Notice in Pursuance of Section 134A.

Notice is hereby given that, the Medical Services Committee of Inquiry for the State of New South Wales, after investigation, having reported on the eleventh day of November, 1958, concerning the conduct of Ralph Harold Ludowici of Wee Waa, a medical practitioner, in relation to his provision of medical services under Part IV. of the National Health Act, 1953-1958, I, Donald Alastair Cameron, Minister of State for Health, did on the 8th day of December, 1958, reprimand the said Ralph Harold Ludowici.

Dated this 8th day of December, 1958.

DONALD A. CAMERON,
Minister of State for Health.

Royal Australasian College of Surgeons.

WEEK-END MEETING AT CANBERRA.

THE N.S.W. State Committee of the Royal Australasian College of Surgeons has organized a meeting at Canberra on March 14 and 15, 1959. The programme is as follows:

Saturday, March 14.—2 p.m.: "Organization of Accident Services", Mr. W. Gissane, Sims Commonwealth Travelling Professor. 3 p.m.: Forum on road accidents: Mr. R. A. Money (central nervous system), Mr. H. M. Windsor (thorax), Mr. D. C. Glenn (abdomen). 4.30 p.m.: Herbert Moran Memorial Lecture, "John Woodall, an Elizabethan Surgeon", Mr. J. Estcourt Hughes. 6.30 p.m.: Subscription dinner for Fellows and wives at Hotel Canberra (black tie).

Sunday, March 15.—10.30 a.m.: "Some Aspects of Military Surgery in Modern Warfare", Major-General W. D. Refshauge.

All lectures will be held in the Florey Lecture Theatre, John Curtin School of Medical Research, Australian National University, Canberra.

All medical practitioners are invited to attend all lectures and the dinner. To enable arrangements to be finalized, it is essential that anyone desiring to attend should notify the honorary secretary at 149 Macquarie Street, Sydney, and signify whether he will be accompanied at the dinner.

FACULTY OF ANÆSTHETISTS: N.S.W. STATE COMMITTEE.

THE New South Wales State Committee of the Faculty of Anæsthetists of the Royal Australasian College of Surgeons invites all medical practitioners to attend a scientific day, to be held at the Lecture Theatre, St. Vincent's Hospital, Sydney, on Saturday, February 28, 1959. Professor Mushin, who is conducting a series of practical demonstrations and tutorials in anæsthetics at St. Vincent's Hospital from February 25 to March 3 inclusive, will be present.

A programme of general interest has been arranged, as follows: 10 a.m., opening address, the Honourable the Minister for Health, Dr. Donald A. Cameron, O.B.E., B.A., M.B., B.S.; 10.30 a.m., "Some Reflections on the Use of Hypnosis as a Method of Anæsthesia", Professor W. H. Trethowan, Professor of Psychiatry, University of Sydney; 11.45 a.m., "Renal Failure and the Artificial Kidney", Dr. H. M. Whyte, Director, Clinical Research Department, Sydney Hospital; 2 p.m., "Observations on the Experimental Production of Mitral and Tricuspid Valve Incompetence", Mr. Ian Monk, Thoracic Surgeon, Royal North Shore Hospital; "The Circulation in Anoxia", Dr. Paul I. Korner, Senior Lecturer in Physiology, University of Sydney; "The Assessment of Aortic Stenosis", Dr. H. A. Fleming, Director, Hallstrom Institute of Cardiology, Royal Prince Alfred Hospital.

A charge of 15s. is being made to defray expenses. Those wishing to attend are asked to notify Dr. George M. Davidson, 86 Elizabeth Bay Road, Elizabeth Bay, and enclose cheque.

The World Medical Association.

PLANS FOR THIRTEENTH GENERAL ASSEMBLY.

THE Canadian Medical Association will be host to the thirteenth General Assembly of the World Medical Association to be convened in Montreal, Canada, from September 7 to 12, 1959. The tentative programme includes the following.

A medical editors' conference will be held on Monday, September 7, 1959. The subject of discussion will be communications by (*a*) the written word—(i) medical Press, (ii) lay Press; (*b*) the spoken word—(i) radio, (ii) audio digest; and (*c*) the visual image—(i) films, (ii) television.

At a session on socio-medical affairs on Thursday, September 10, 1959, a panel discussion will take place on "The North American Approach to Health Insurance".

For the scientific programme on Wednesday, September 9, 1959, two eminent Canadian doctors have been invited to present papers.

Participants will have the opportunity to visit Montreal General Hospital, Hospital Notre Dame and Ayerst McKenna and Harrison Pharmacological Research Laboratory.

Technical and scientific exhibits will be held in connexion with the Assembly.

The registration fee is $10.00 per person.

Pre-registration and additional information relative to the thirteenth General Assembly may be obtained from the Secretary-General, The World Medical Association, 10 Columbus Circle, New York 19, N.Y.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following additions and amendments have been made to the Register of Medical Practitioners for New South Wales, in accordance with the provisions of the *Medical Practitioners Act*, 1938 to 1958:

Registered medical practitioners who have complied with the requirements of Section 17 (3) and are registered under Section 17 (1a) of the Act: Beeston, Hugh Olivey, M.B., B.S., 1957 (Univ. Queensland); Brasted, Eric Paul, M.B., Ch.B., 1946 (Univ. New Zealand); Burne, David John, M.B., B.S., 1956 (Univ. Melbourne); Windrum, Graham Melrose, M.B., B.S., 1951 (Univ. Queensland), M.C.P.A., 1956, D.Phil. (Oxford), 1954; Woodhouse, John Sugden, M.B., B.S., 1957 (Univ. Melbourne).

Registered medical practitioners who have complied with the requirements of Section 17 (3) and are registered under Section 17 (1b) of the Act: Cook, Peter, M.B., B.S., 1953 (Univ. London); Kertesz, Andrew, M.B., B.S., 1945 (Univ. London), D.T.M. and H. (R.C.P. and S.), 1947, D.C.P. (London), 1950, M.C.P.A., 1956; McCormack, Grace Alison, M.R.C.S. (England), L.R.C.P. (London), 1940; Sugerman, Sydney, L., L.M., R.C.P. (Ireland), L., L.M., R.C.S. (Ireland), 1954; Whittaker, Evan, M.B., Ch.B., 1955 (Univ. Edinburgh).

Registered medical practitioner who has complied with the requirements of Section 17 (3) and is registered under Section 17 (2A) of the Act: Reichardt, Julius, M.D., 1940 (Univ. Cluj).

Registered medical practitioner who has complied with the requirements of Section 17 (3) and is registered under Section 17 (2B) of the Act: Moser, Rudi, M.D., 1924 (Univ. Berlin).

Registered medical practitioners who have been issued with a licence under Section 21C of the Act: Abrahamowski, Zeno, M.D., 1939 (Univ. Vienna), in respect of the Liverpool District Hospital; Bokor, Peter Paul, M.D., 1954 (Univ. Budapest), in respect of the Eastern Suburbs Hospital.

Notice.

BRITISH MEDICAL ASSOCIATION: VICTORIAN BRANCH.

Annual Church Services.

ON Sunday, February 8, 1959, the tenth annual special services for the medical profession will be held at St. Paul's Cathedral and St. Patrick's Cathedral, Melbourne, at 11 a.m. The preacher at St. Paul's Cathedral will be the Reverend G. W. A. Kircher, Th.L., Minor Canon and Precentor of the Cathedral, and the preacher at St. Patrick's Cathedral will be the Reverend J. J. Gannon, O.P.

Members will enter the cathedrals in procession, and are asked to assemble in the precincts fifteen minutes before the commencement of the services. Members attending St. Paul's Cathedral are asked to assemble in the Chapter House on the second floor of the cathedral buildings, entering the buildings from the cathedral close. It is desired that academic dress be worn, but this is not essential. All members (whether or not they are wearing academic dress) are asked to join the processions and sit together in a group. The Victorian Branch Council invites medical students to attend the services and also to join the processions. Separate seating will be reserved for members' families.

THE CHILDREN'S MEDICAL RESEARCH FOUNDATION OF N.S.W.

THE following is a list of donations to the Children's Medical Research Foundation of New South Wales received from members of the medical profession in the period December 19, 1958, to January 6, 1959:

Dr. and Mrs. E. A. Booth (second donation), B.M.A. Section of Obstetrics and Gynæcology: £10 10s.

Dr. and Mrs. W. Marsh: £10.

Dr. Doris M. Coutts (second donation): £7.

Dr. P. E. Walton Smith: £6.

Dr. A. E. Colvin: £5.

Dr. Ronald Pratt: £2.

Previously acknowledged: £7820 16s. 9d. Total received to date: £7871 16s. 9d.

Notes and News.

Retirement of Dr. Frank Dickinson.

Dr. Frank Dickinson retired on January 1, 1959, from the position of director of the American Medical Association's Bureau of Medical Economic Research, which he had held since September 1, 1946.

Royal College of Physicians of London: Milroy Lectures.

The 1959 Milroy Lectures of the Royal College of Physicians of London will be delivered by A. R. Southwood, C.M.G., M.D., M.R.C.P., of South Australia. The subject of the lectures is "Aspects of Preventive Cardiology: (i) The Elaboration of Public Health; (ii) The Rise of Biochemistry". The lectures will be given on February 3 and 5, 1959, at 5 p.m., at the Royal College of Physicians, Pall Mall East, London.

International Seminar for Public Health Workers from Overseas.

The International Seminar for 1959 organized by the Central Council for Health Education will be held from April 21 to 24 at the London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1. The course is intended for medical officers, health educators, health inspectors, social workers and others concerned with the health education of the public.

An introductory address will be given by Professor Richard G. Bond, School of Public Health, University of Minnesota. The main emphasis of the programme will be placed on discussion meetings followed by lectures which will include a critique of these discussions. Practical instruction on the techniques of health education and the production of visual aid materials will also be given.

The course will be non-residential, but accommodation will be reserved in nearby hotels for those who require it. The fee for attendance at the seminar will be approximately £6 6s. Applications for enrolment should be made to the Medical Director, Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

Medical Appointments.

Dr. L. L. Hoare has been appointed Honorary Assistant Surgeon at the Royal Adelaide Hospital, Adelaide.

Dr. C. G. Wilson has been appointed Honorary Assistant Surgeon at the Royal Adelaide Hospital, Adelaide.

Dr. J. M. McPhie has been appointed Honorary Clinical Cardiologist (with status of Assistant Physician) at the Royal Adelaide Hospital, Adelaide.

Dr. N. J. Mitchell has been appointed Honorary Clinical Assistant (Department of Medicine) at the Royal Adelaide Hospital, Adelaide.

Dr. F. E. Welch has been appointed Honorary Obstetrician (Maternity Section) at the Queen Elizabeth Hospital, Adelaide.

Dr. R. S. Colton has been appointed Honorary Assistant Physician at the Queen Elizabeth Hospital, Adelaide.

Dr. A. K. Grant has been appointed Honorary Assistant Physician at the Queen Elizabeth Hospital, Adelaide.

Dr. N. J. Bonnin has been appointed Honorary Assistant Surgeon at the Queen Elizabeth Hospital, Adelaide.

Dr. J. A. O'Brien has been appointed Honorary Assistant Surgeon at the Queen Elizabeth Hospital, Adelaide.

Dr. J. M. Collins has been appointed Psychiatrist, Mental Hygiene Branch, Department of Health, Victoria.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED DECEMBER 20, 1958.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	2	1(1)	4(1)	..	..	..	..	..	7
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	..	..	1	..	..	..	1	..	2
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	1	..	..	..	..	..	1
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	3(2)	1(1)	3(3)	..	1	..	2	..	10
Diphtheria	3	..	..	..	..	..	..	..	3
Dysentery (Bacillary)	..	1(1)	3(2)	..	5(5)	..	3	..	12
Encephalitis	..	..	..	..	..	..	..	..	..
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	3	..	..	3
Infective Hepatitis	77(21)	12(8)	14(3)	55(7)	4(3)	..	1	..	163
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	3	..	..	..	3
Leptospirosis	..	..	..	..	..	..	..	..	..
Malaria	..	..	..	..	..	..	..	..	..
Meningococcal Infection	2(2)	1(1)	..	..	..	2	..	..	5
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	2(1)	..	..	..	..	..	..	..	2
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	38(28)	..	2(2)	61(58)	..	..	2	103
Salmonella Infection	..	..	..	1(1)	1	..	..	..	2
Scarlet Fever	8(2)	11(8)	1	2(2)	1	..	..	..	23
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	13(6)	..	7	..	20
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	17(11)	8(4)	15(7)	3(3)	3(2)	1	..	..	47
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	1	..	..	..	..	..	1
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED DECEMBER 27, 1958.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	..	6(6)	3(2)	..	..	..	..	..	9
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	..	..	5	..	..	..	1	..	6
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	4(4)	13(12)	4(4)	..	..	..	..	..	21
Diphtheria	..	..	..	..	..	..	..	..	..
Dysentery (Bacillary)	..	2(2)	1	..	1(1)	1	..	..	5
Encephalitis	..	..	..	..	..	..	..	..	..
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	1(1)	..	..	..	..	..	..	1
Infective Hepatitis	64(13)	19(17)	5	10(7)	3(3)	1	..	..	102
Lead Poisoning	..	..	1(1)	..	..	..	..	..	1
Leprosy	..	..	..	..	..	..	2	..	2
Leptospirosis	..	..	5	..	..	..	..	..	5
Malaria	..	..	2	..	..	..	..	..	2
Meningococcal Infection	1(1)	1	1(1)	..	..	1	..	..	4
Ophthalmia	..	..	..	..	1	..	..	..	1
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	..	..	..	..	..	..	..
Puerperal Fever	..	1	2	..	..	..	..	..	3
Rubella	..	50(48)	..	6(5)	41(40)	..	..	1	98
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	7(2)	18(14)	..	..	1	2	..	..	28
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	1(1)	..	2	..	3
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	7(7)	21(17)	1	1(1)	1	5	..	..	36
Typhoid Fever	..	1	..	..	1	..	..	..	2
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

Corrigendum.

FLUID AND ELECTROLYTE METABOLISM IN CHILDHOOD IN HEALTH AND DISEASE.

In the paper entitled "Fluid and Electrolyte Metabolism in Childhood in Health and Disease", by W. B. Macdonald, in the issue of January 10, 1959, at page 35, we have inadvertently published the wrong illustration. The illustration which appears as Figure 1 on page 36 belongs to another paper, by John McDonald, which appears in the present issue. The correct illustration for Professor W. B. Macdonald's paper is as follows:

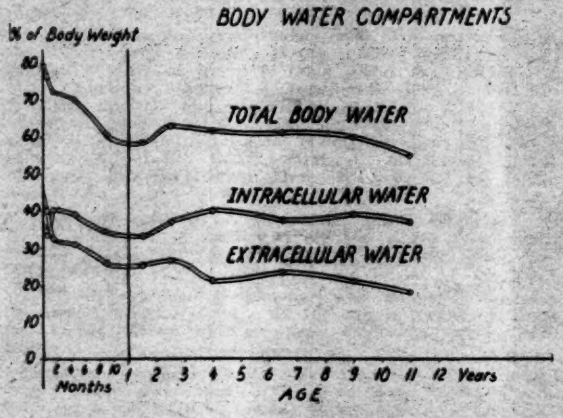

FIGURE 1.

We offer our sincere apologies to Professor Macdonald and to Dr. John McDonald for this unintentional but regrettable error.

Honours.

THE following is an extract from the *Commonwealth of Australia Gazette*, Number 73, of November 27, 1958:

Government House,
Canberra,
20th November, 1958.

It is notified for general information that Her Majesty the Queen has granted restricted permission for the acceptance and wearing of the following award by the undermentioned with effect from 20th May, 1958.

Conferred by the President of the Republic of France:

Chevalier de l'Ordre de la Santé Publique.

Dr. John Gregory Stanbury of Sydney.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Beal, Robert William, M.B., B.S., 1958 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

The undermentioned has applied for election as a member of the Victorian Branch of the British Medical Association:

Shub, Samuel, M.B., B.S., 1953 (Univ. Adelaide), M.R.A.C.P., Flat 1, 27 Wallace Avenue, Toorak.

Deaths.

THE following deaths have been announced:

BRETTINGHAM-MOORE.—Edward Brettingham-Moore, on January 9, 1959, at Hobart.

RUTHERFORD.—James Rutherford, on January 10, 1959, at Sydney.

OSTERMEYER.—William Ostermeyer, on January 13, 1959, at Melbourne.

WICKENS.—Hugh Frederic Wickens, on January 14, 1959, at Murray Bridge, South Australia.

FORBES.—Arthur Duncan Forbes, on January 19, 1959, at Nyngan, New South Wales.

Diary for the Month.

FEB. 3.—New South Wales Branch, B.M.A.: Organization and Science Committee.
FEB. 4.—Western Australian Branch, B.M.A.: Branch Council.
FEB. 5.—South Australian Branch, B.M.A.: Council Meeting.
FEB. 6.—Queensland Branch, B.M.A.: Clinical Meeting, Brisbane Hospital Clinical Society.
FEB. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculosis Association of New South Wales. The Maitland Hospital.

South Australian Branch (Honorary Secretary, 30 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations, other than those normally used by the Journal, and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those of the list known as "World Medical Periodicals" (published by the World Medical Association). If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this Journal. The management cannot accept any responsibility or recognise any claim arising out of non-receipt of journals unless such notification is received within one month.

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